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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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A REPORT ON A STUDY OF VIRUS TRANSMISSION BY FUNGI AND NODULE BACTERIA OF PEAS

Folke Johnson[1] and Leon K. Jones[2]

Insects and parasitic seed plants such as dodder (Cuscuta spp.), (1,3), and broom-rape, (Orobanche sp.), (6), are known to transmit phytopathogenic viruses, but fungi and bacteria have not received much attention with regard to their ability to act as virus vectors. Before the virus nature of wheat mosaic (Marmor tritici Holmes)[3] was known, McKinney studied cultures of Helminthosporium sativum Pamm., King, & Bakke, isolated from viruliferous plants as a possible cause of the disease (7), and in later work Nelson (8) tested Uromyces appendiculatus (Pers.) Fries, as a vector of bean mosaic virus (Marmor phaseoli Holmes) but negative results were obtained in both of these investigations. It is the purpose of this note to record some results obtained at the Agricultural Experiment Station of the State College of Washington, Pullman, Washington, on the possibile activity of fungi and nodule bacteria (Rhizobium leguminosarum Frank), of peas, in virus transmission.[4] Pea nodule bacteria and fungi causing leaf spots, mildew, wilt, and damping-off of peas were studied in this relation with several viruses.

Tests With Air-Borne Fungi. Ascochyta pisi Lib. isolated from pea plants infected with severe mosaic (5), and Cladosporium pisicola (Link) Snyder isolated from peas infected with enation mosaic (5) (Marmor pisi Holmes), were cultured separately on potato-dextrose agar in Petri dishes. Healthy pea plants were inoculated with separate spore suspensions of the 2 fungi in water. The plants became heavily infected by Ascochyta and Cladosporium but in no case did any pea plants show symptoms of mosaic. Similarly, conidia of Erysiphe polygoni DC. were collected from pea plants infected with severe mosaic, added to water and the spore suspension sprayed on healthy plants. Mildew developed on all inoculated plants but no mosaic was observed. No test was conducted with the perithecial stage since it was not available at that time.

Tests With Soil-Borne Fungi. Since the tested air-borne fungi did not transmit virus in these experiments, it also seemed desirable to study some of the important parasitic fungi normally present in the soil, such as Rhizoctonia, Fusarium, and Pythium, which cause wilt and damping-off, as agents in the dissemination of pea viroses. Isolates were obtained

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[3]The Latin names of the viruses follow the system of nomenclature presented in the Handbook of Phytopathogenic Viruses. (2).

[4]Johnson, Folke. Viroses of the garden pea (Pisum sativum L.) in Washington. The State College of Washington, 1939. (Ph.D. Thesis).

from viruliferous pea plants by isolating the fungi directly from plants showing symptoms of wilt and damping-off. Giant cultures were made and each isolate mixed with sterile soil in which surface-sterilized pea seed were planted. Some plants quickly damped-off, others showed symptoms of wilt, while still others appeared healthy. Attempts to recover virus from the wilted and damped-off plants were made at frequent intervals but no virus transmission by these fungi was demonstrated.

Tests With Nodule Bacteria. Investigations have shown that viruses seldom are transmitted by pea seed, consequently the best explanation of how these viruses over-winter is by reservoir hosts from which they are spread to adjacent peas by insects. Since there appears to be a mutual exchange of material between the host and its symbiont, the possibility of viruses being present in the soil in nodule bacteria (Rhizobium leguminosarum) seemed worth investigation, particularly since viruses can be recovered from roots of viruliferous pea plants.

Nodule bacteria were isolated separately from pea plants infected with the viruses causing enation mosaic, severe mosaic, and the complex previously referred to as white-clover mosaic but now known to consist of 2 viruses (4), and cultured on Ashby's agar in Petri dishes. The bacteria from each series were suspended separately in sterile water to which surface-sterilized pea seed were added, after which the seed from each group were planted in sterile soil. The plants made good growth but no mosaic developed.

A subsequent test was made with the white-clover mosaic complex. Soil in a greenhouse bench had previously been sterilized with a standard treatment of formaldehyde solution. A bacterial suspension in water was prepared by crushing the nodules from viruliferous plants in the water and surface-sterilized pea seed were immersed in the bacterial suspension. The seed were then planted and the suspension poured over the seed in the soil. It was recognized that a certain amount of macerated plant tissue from the nodules was also present in the water and although this was insignificant in comparison with the large amount of water used, a check to counteract this error was made by macerating a considerable amount of viruliferous host tissue without nodule bacteria in another sample of distilled water. Pea seed were immersed in this decoction and planted together with the macerated tissue as described above. One plant in the group where nodule bacteria were added, definitely showed mottling and necrosis. Virus was recovered from this plant by using plant extract as inoculum for other healthy pea plants. All inoculated plants became diseased and showed the same symptoms as the original plant. These experiments were conducted in the spring when the greenhouse vents were open and it might be suggested that an insect vector was involved, even though the house had been fumigated regularly. No plants became diseased in the section where macerated host tissue without the bacteria was added to the soil.

The fact that positive virus transmission was obtained in one experiment with nodule bacteria is by no means conclusive and only suggests that more work along this line may be desirable. In cases where these organisms were sub-cultured on agar media, virus multiplication in the isolates would be necessary for the isolates to act as vectors under the conditions

of these experiments. Apparently no virus multiplication occurred in these organisms. The results do not exclude the possibility that nodule bacteria might acquire some virus when directly associated with a viruliferous host, but that such virus is subsequently lost by culturing the isolate.

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WASHINGTON AGRICULTURAL EXPERIMENT STATION

STEM NEMATODE ON POTATO: A NEW POTATO DISEASE IN IDAHO

Earle C. Blodgett

Immediately after the initiation of the Program of the Emergency Plant Disease Prevention Project in Idaho in August 1943, a letter was written stating the purposes of the program and asking for help by all interested persons and agencies to discover new or unusual outbreaks of plant disease.

On October 26 when the writer visited the Branch Station at Aberdeen the Superintendent, John L. Toevs, suggested that we visit a nearby potato field said to have some unusual condition. Dr. James Kraus, in charge of Potato Research at Aberdeen joined us in examining the field. Digging was about half completed on the 4-acre field and the grower was about ready to quit harvesting because of the disease condition.

The field had an eastern exposure and 3 definite areas as regards drainage. The upper end was fairly level and had a trace to about 20% of the tubers showing the "skin checking" as the new disease was tentatively designated. The center part of the field had a rather sharp slope and the damage was about the same as in the upper portion. The lower part of the field was very level although drainage was satisfactory and here the damage ranged easily up to 75%.

The skin checking was found anywhere on the tuber in severity ranging from almost invisible marks to complete coverage. The pickers were trying to sort but mild cases could be found only by careful examination. The most severely affected tubers were already rotting and it was doubted that harvesting was worth-while.

The grower stated that a similar condition though much less severe had occurred in the same field 2 years ago and also in a nearby field. The land was in alfalfa in 1942, but had severely "winter killed".

Neither Mr. Toevs, Dr. Kraus, the writer, nor several Produce Inspectors and dealers who later saw samples, had ever seen this type of injury on potatoes. Mr. Toevs suggested that I make a survey as far as feasible in the area. On October 27, 6 other fields were examined and in 2 of these very severe injury was reported; none in the others. It was of interest to note that in one planting on old clover land injury was 50 to 75%, but was much less on an adjacent alfalfa strip. Harvesting was nearly completed and the grower asked about using the tubers for seed for next year as it was from good stock.

The occurrence of so serious a condition on Netted Gen potatoes grown in that particular area was of considerable concern and the writer collected field run samples, selected samples of potatoes and a hundred pounds or more of soil and brought them to Moscow for further study and tests.

The credit for calling my attention to the trouble belongs to John Toevs, Superintendent of the Aberdeen Branch Station, and the credit for first diagnosing the disease belongs to Dr. Glenn KenKnight, Department of Plant Pathology, University of Idaho, who found great numbers of the stem nematode Ditylenchus dipsaci in the lesions under the skin checks. There seems little doubt but that these nematodes are responsible for the condition designated as skin checking. Confirmation of this diagnosis was made by Dr. G. Steiner, of the U. S. Department of Agriculture, who states that "so far as we know this is the first case of the potato being attacked by this nematode in the United States."

There seems little doubt either but that a serious new problem is now to be dealt with. Further tests are planned to determine the host range and further surveys are necessary to determine its distribution in the State. This note is to report the first record of the stem nematode on potatoes in Idaho and point out its potential seriousness. It may serve too to illustrate the value of cooperation in a program of this kind.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

POTATO DISEASES IN VERMONT

Robert C. Cassell

The period from November 14 to 20 was spent inspecting potatoes stored on farms in western Vermont. In the whole western area, from Bennington in the south to St. Albans in the north, no potatoes were produced on a really commercial basis. A Government purchasing depot was established at St. Albans but no potatoes have been purchased through the agency since production was not sufficient to meet the regional needs.

The St. Albans area in Franklin County was apparently the most seriously affected by late blight of any area in New England. A few fields were not dug. Practically all fields dug were reduced in yield from 35 to 75% with an average reduction of about 50%. One grower saved 700 bushels out of 2000 and that part saved still contains about 15% blighted tubers. Another man salvaged 170 out of 500 bushels; still another left half of the potatoes in the field. In St. Albans one grower in grading his crop from a 7-acre field got 280 bags (100 lbs.) of No. 1's, 27 bags of B's, and 303 bags of late blight "throw-outs".

In western and especially northwestern Vermont the season was late and many potato fields were not planted until the last of June. By the last of September the tops in many fields had been killed by the late blight fungus. Most growers dust their potatoes in this area, and with so much rain this year the season was decidedly unfavorable to control. In this area, also, there was the usual number of growers who dug early when possible, while the vines were still partially green. These growers suffered from almost 50 to almost 100% loss and the bins have already been thrown out.

Following are the results of examination of 22 farm storages:

Late Blight (Phytophthora infestans). As noted above, all lots were sorted for late blight at digging time and some lots have been graded once or twice since then. The percentages given here are as the bins appeared this week. Twenty of the 22 bins had blighted tubers; over 3/4 of the affected bins showed only traces or slight amounts. One bin showed 50%, another 15%, another 6%, and another 5%.

Scab (Actinomyces scabies). Less than 5% of the bins had any appreciable amount of scab. Except for 3 cases, with 20, 5, and 3%, the lots showed only traces.

Rhizoctonia (Rhizoctonia solani). Very little "rhizoc" was observed in this area. Only a trace was found in 4 of the 22 lots.

Net Necrosis (leaf roll virus) was found only in Green Mountains; on these it was present in 5 of 7 bins. Counts were: slight, 1%, 4%, 5%, and 25%.

Stem-end Browning (undet.), also, was found only in Green Mountains, in 6 of the 7 bins. Readings were: trace, trace, 3%, 5%, 8%, and 35%. The bin with 25% net necrosis showed 5% stem-end browning; and the bin with 35% stem-end browning showed 4% net necrosis.

Sunburn (non-par.). About 1/3 of the bins showed noticeable sunburn; in all cases the variety was Katahdin. Four bins showed a trace, 1 bin about 8%, and 3 bins about 10%.

Hollow Heart (non-par.). A trace was found in 4 bins of Katahdins. It was present in some of the small tubers as well as the large ones.

Frost Damage. Only 2 bins showed signs of frost injury, one of Russets and one of Katahdins. In each case only a trace was found.

Growth Cracks. Traces were observed in 2 of the 22 bins.

No Ring Rot or Black Leg was found in the farm bins of western Vermont.

During the week from November 21 to 27, 14 commercial bins of potatoes were inspected at Morrisville and Hardwick in northcentral Vermont. Twelve bins were Green Mountains, 1 was Katahdins, and 1 Houmas.

Late Blight was present in 6 of the 14 bins, as follows: 2 bins with a trace, 1 with 1%, 1 with 2%, 1 with 5%, and 1 with 25%.

Bacterial Ring Rot (Corynebacterium sepedonicum). The bin of Houmas at Hardwick came from a field that showed some bacterial ring rot at digging time, according to the owner. However, none was evident to surface inspection at the time the bin was examined.

Black Leg-Rhizoctonia Complex. Traces were found in 8 bins of Green Mountains; none was found in either Katahdins or Houmas.

Net Necrosis (leaf roll virus) was found in 5 of the 12 Green Mountain bins, as follows: 2 bins with 5%, 1 with 15%, 1 with 20%, and 1 with 50%. None was found in Katahdins or Houmas.

Stem-end Browning was found only in 7 of the Green Mountain bins. Readings were: 3 bins; a trace; 1 bin, 1%; 2 bins, 5%; 1 bin, 10%.

Sunburn was found only in the one bin of Katahdins where about 5% of the tubers were affected.

No Black Leg (Erwinia atroseptica) [E. phytophthora], Rhizoctonia, or Scab of importance was seen; and no frost damage, growth cracks, or hollow heart.

The commercially stored potatoes in Morrisville and Hardwick were in very good condition. The bins were dry and the potatoes were keeping well. Except for occasional and generally small losses from late blight and net necrosis, the potatoes should eventually reach the consumer in first-class condition.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

OTHER REPORTS ON POTATO DISEASES

POTATO DISEASES IN FLORIDA: Central Florida -- On an area of peaty muck at Zellwood in Orange County, 2 adjoining plantings comprising 20 acres each, of Red Bliss and an unknown white-skinned variety, were characterized by a rather poor stand which was attributed to poor seed, and the frosts of the preceding 3 nights had done considerable damage to the majority of the vines. In the few plants of both varieties that were dug for examination the tubers exhibited considerable scab (Actinomyces scabies) infection. (November 12). -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project.

Florida West Coast -- Potatoes apparently are not a very important fall crop in this area. Occasional instances of mosaic (virus), and of Rhizoctonia [solani] stem rot or wilting or dwarfed plants, were observed in small plantings. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

BACTERIAL RING ROT IN NEVADA: November 17 and 18 were spent with Mr. Schogren of the Nevada State Department of Agriculture visiting a number of potato storage cellars near Reno. In one cellar bacterial ring rot [Corynebacterium sepedonicum] was present. Visible symptoms were seen in approximately 1% of the tubers. The seed was traced by Mr. Schogren to a single source, and to 6 plantings planted to this seed. As far as is known, the contaminated lots of tubers from these fields are all stored in the same cellar. Steps are being taken by the State Department of Agriculture to prevent tubers from this cellar from being used as seed next

season. Diagnosis of the disease was checked by the gram-stain technique. -- Seth Barton Locke, Emergency Plant Disease Prevention Project.

REPORTS ON DISEASES OF VEGETABLE CROPS

VEGETABLE DISEASE SURVEYS IN FLORIDA: Northern and Central Florida -- A trip was made through the ridge section of Florida from Lake Alfred (Polk County) south to Lake Placid (Highlands County), the cucumber-growing section at Wauchula in Hardee County, and Pinellas County on the West Coast, from October 25 to 30, and observations made then were supplemented by local trips to examine various vegetable plantings and at points around Gainesville (Report October 24 - November 7).

A series of 3 one-day trips were made to inspect vegetable plantings at various points, particularly eggplants in Alachua and Marion Counties. On November 8 a total of 167 acres of vegetables, mostly eggplants, was examined in the vicinity of Ocala, Marion County. The weather conditions for crops in this section were generally unfavorable owing to lack of rainfall.

A trip to Zellwood in Orange County, November 12, afforded an opportunity for a brief inspection of extensive vegetable plantings on an area of peaty muck, where crops are grown largely for a local dehydrating plant. About 3000 acres in this section have been ditched and brought under cultivation, and about 3/4 of this area is said to be planted this year. As is generally the case with muck soils the plantings are rather subject to cold injury, therefore the area is considered to be best suited for early fall and late spring crops. String beans in this section were killed by cold a few weeks ago and have been largely replaced by other crops. The cold weather of the preceding few days also resulted in some damage to other crops. This trip was made in company with Dr. F. S. Jamison and Dr. B. E. Janes of the Horticultural Department, and Dr. Phares Decker of the Plant Pathology Department of the Experiment Station (Gainesville). The various plantings examined contained 308 acres.

On November 15 a second trip was made to inspect vegetable plantings in Alachua and Marion Counties. Dry weather has prevailed in that region for the past few weeks. (Report November 8-20). Observations on diseases made during these trips are reported separately under the various crops.-- Arthur S. Rhoads, Emergency Plant Disease Prevention Project.

East Coast of Southern Florida -- From November 15 to 20 a survey was made along the coast, from West Palm Beach (Palm Beach County), south to Homestead (Dade County). Rain handicapped the survey. The soil type varied from sand to a little muck near Miami to rock land and marl near Homestead. Disease observations are reported under the hosts. -- R. A. Hyre, Emergency Plant Disease Prevention Project.

Florida West Coast -- During the period November 15 to 27, the survey was conducted, in the main, in the coastal areas in Manatee and Sarasota Counties, from Venice at the southern end to Gillett at the northern, where the more tender and nearly mature crops such as beans, cucumbers, eggplants, peppers, squash, and tomatoes are being grown; and in the winter-

celery section in the muck areas of Sarasota County. A trip was also made to the Florida Strawberry Laboratory at Plant City, Hillsboro County; and one into the Clearwater area of Pinellas County where gladiolus growing is extensively carried on, with cucumbers and tomatoes also raised as fall crops. Rather heavily scattered through most of these areas, also, are plantings of some of the more hardy leafy crops such as cabbage, cauliflower, escarole, and lettuce, which would not be so subject to injury in the event of sudden cold temperatures.

Whenever possible these trips were made in company with members of the staff at the Florida Vegetable Crops Laboratory at Bradenton, or with the County Agent concerned in the areas visited.

Planting and subsequent growth of the fall crops in numerous areas was seriously delayed by heavy rains in September and again in October, and much replanting was necessary owing to loss of plants or seeds in the field through excessive water. As a result, many plantings are either spotty through lack of replants or late in maturity owing to delay in general planting. Growth of crops in general appears to be very good and the disease situation, with some exceptions, is to date rather mild.

Besides the crops reported separately below, plantings of endive, escarole, lettuce, and peppers were observed. No disease was noted on these as yet and the plantings in general appear to be in very good condition.--F. P. Schlatter, Emergency Plant Disease Prevention Project.

VEGETABLE DISEASE SURVEY IN THE COASTAL AREA OF CENTRAL CALIFORNIA: During the week ending November 20, 3 days were spent in the vegetable-growing areas near Salinas (Monterey County), Watsonville (Santa Cruz County), and Hollister (San Benito County). The main crops here at present were carrots, lettuce, celery, various crucifers, and spinach. There was also a large acreage of artichokes near Castroville (Monterey County). -- Horace L. Barnett, Emergency Plant Disease Prevention Project.

ARTICHOKE LEAF SPOT IN THE COASTAL AREA OF CENTRAL CALIFORNIA: Artichokes (globe artichoke, Cynara scolymus) are grown mainly in the area near Castroville, Monterey County. Several large fields were examined in this region. Most of them showed a heavy attack by leaf spot (Ramularia cynarae). Lesions were present on the middle-aged leaves and the flower stalks as well as on the older leaves. -- Horace L. Barnett, Emergency Plant Disease Prevention Project. November 20

ASPARAGUS RUST IN NEW JERSEY: Observations were made on the extent of rust (Puccinia asparagi) infection in a large number of plantings throughout Gloucester County. In very few fields were the plants still actively growing; in most they were yellowing or dying. In the Gibbstown-Bridgeport area only a slight amount of rust was noted; less than 5% of the plants were affected and the lesions were few and scattered on the plants. Many small plantings observed near Thorofare were generally severely affected, only 1 field in 9 visited showing slight infection, infection in the other fields ranging from moderate to very severe; rust was abundant on nearly all plants in 3 of the fields. Of 2 fields examined near Huffville, 1 was severely and the other slightly affected. In 1 field near Aura 75% of the plants showed numerous rust lesions. In a 40-acre field near Mullica Hill about 45% of the plants showed few to numerous lesions. Rust was rather severe in the Clayton area; near Newfield it was less pre-

valent. One of the worst affected fields was an 8-acre field east of Woodbury in which all the plants were moderatly to severely attacked; the rust lesions in this field were consistently parasitized by Darluca filum. -- E. A. Walker, Emergency Plant Disease Prevention Project. October 20-23.

BEAN DISEASES IN MARYLAND: Snap beans growing on the north side of South Mountain near Boonsboro, Washington County, were severely affected with powdery mildew (Erysiphe polygoni). About 50% of the leaves had already dropped off and the younger leaves were distorted. Mature pods were covered with purple blotches, while younger pods were twisted and undeveloped. The leaf petioles and main stems were so covered with the fungus as to give them a grayish white scaly appearance. Powdery mildew was severe on the more mature plants observed in the Middle River section of Baltimore County. The fungus was growing freely on all above-ground parts. The disease was present in all lots of snap beans observed at the farmers' produce market at Hagerstown, generally in mild amounts, but severe in several lots.

Only a very slight amount of bacterial blight (Xanthomonas phaseoli) was noticed in any field observed in the Middle River section of Baltimore County.

Downy mildew (Phytophthora phaseoli) occurred in only a few lots of lima beans observed at the farmers' produce market at Hagerstown, in very light amounts. -- E. A. Walker, Emergency Plant Disease Prevention Project. October 11-30.

BEAN DISEASES IN FLORIDA: Bean Diseases on the East Coast -- About 875 acres of beans were observed, from almost mature plants in the northern part of the area to seedlings just emerged near Homestead. I visited a number of fields where Sclerotinia sclerotiorum was estimated by the grower to have caused up to 25% loss last year but where none was apparent at this time.

From West Palm Beach to Miami plants killed or severely injured by Rhizoctonia solani were present to the extent of a trace to 6%, with still more Rhizoctonia infection following stalk borer injury in the northern part of this area. Healthy-appearing but stunted plants, when pulled up, frequently showed Rhizoctonia lesions on the stems, so the actual loss is difficult to estimate. Near Homestead one 40-acre tract of young beans on marl soil had an estimated 25 to 30% loss, and another 40-acre field showed about 3 to 5% loss. Dr. Geo. D. Ruehle stated that this last field was the best he had seen in several years and that Rhizoctonia was a serious problem on beans in that area.

Sclerotium rolfsii, southern blight, was most serious in Palm Beach County, often killing from 5% to 10% of the plants, while in 55 acres 26 to 30% of the plants were killed. In the latter case frequently all of the plants would be killed in 1- to 3-foot strips in the rows. In the vicinity of Pompano where the weather had been drier, less southern blight was present, plants killed amounting from a trace up to 3 to 4%. The disease was not seen on the marl soils near Homestead.

Mosaic (virus) was seen only in small amounts but Dr. G. R. Townsend, earlier, reported seeing very severe mosaic on the east coast. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

Rhizoctonia Root and Stem Canker on the West Coast -- Most fields observed are apparently in good condition as yet. In a small planting on the Station (Bradenton) grounds there were found rather frequent occurrences of wilted seedlings showing root and stem rot apparently typical of Rhizoctonia although not yet identified as such; and in a 6-acre field at Sarasota from 1 to 5% (the grower estimates 3% average loss) of the nearly mature plants showed yellowed, dying foliage and the presence of root and stem cankers. According to Dr. A. L. Harrison of the Bradenton Station this is not typical Rhizoctonia injury, though the grower's statement that the trouble is more prevalent on ground previously planted to potatoes might perhaps suggest this organism. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

RHIZOCTONIA STEM CANKER OF LIMA BEANS IN FLORIDA: About 25 acres of young lima beans were seen in East Coast plantings. Below West Palm Beach about 4% to 8% of the lima beans had Rhizoctonia solani infection following stalk borer injury. Near Homestead Rhizoctonia lesions were found on young lima beans in the absence of insect injury. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

BEAN DISEASES IN TEXAS: The most important trouble of snap bean observed was chlorosis. All of the fields seen in the Lower Rio Grande Valley, with one exception, revealed 100% chlorosis. Ashy stem blight (Macrophomina phaseoli) was observed in 2 small plantings. The greatest loss noted, nearly 2%, was in a planting of Pinto beans north of Santa Rosa (Cameron County). The same planting also exhibited the most severe attack of rust (Uromyces phaseoli var. typica) observed. Nearly every leaflet was infected and rust pustules reduced the photosynthetic surface by at least 25%. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20 - December 1.

At Winter Haven, Dimmit County, in a bean variety planting on the experiment station, many plots were heavily attacked by rust, and certain varieties were covered with powdery mildew (Erysiphe polygoni) -- (November 15-20).

Near Edinburg, Hidalgo County, a 15-acre field of snap beans showed 29% of the plants wilting from the effects of underground stem lesions caused by Rhizoctonia solani. A trace of mosaic (virus) was present also. (Week ending November 27.) -- G. M. Watkins, Emergency Plant Disease Prevention Project.

ASTER YELLOWS ON CARROTS IN TEXAS: The most serious disease in Zavala and Dimmit Counties (Winter Garden area) now is aster yellows (virus) of carrots. A considerable number of commercial carrot plantings were examined in the vicinity of Crystal City, Winter Haven, Carrizo Springs, and Asherton. The percentage of plants showing symptoms ranged from none in young fields to about 80% in fields of nearly mature plants. In general symptoms did not appear in carrots younger than about 3 months. Several fields estimated to be about 3 months old contained symptom-showing plants ranging from less than 1% to about 4%. In most nearly mature carrot fields the percentage of plants with symptoms ranged from 35% to 55%. Observations of weeds bearing aster yellows symptoms showed that Lactuca scariola

was present in and around most carrot fields and nearly always appeared to bear the virus. Another composite, Ximinesia encelioides, occurred in or near certain fields and in many cases the plants had symptoms of aster yellows. Other possibly infected weeds that were observed occasionally near diseased carrot plants were Verbena sp., Solanum nigrum, and Marilaunidium jamaicense. An endive field, about 1 acre, and an adjoining field of young lettuce showed occasional plants with apparent symptoms of aster yellows. -- G. M. Watkins, Emergency Plant Disease Prevention Project. November 15-20.

Aster yellows is extremely prevalent in the Winter Garden region. An extensive survey has shown infection of early plantings varying from 1% to 84%. Very few, if any, carrot plantings are free from this disease in the Winter Garden area. Young plantings, with tops of 4 to 6 inches, revealed infections of nearly 4%. An average infection of nearly 30% was estimated considering the total acreage of carrots surveyed in this area up to the present time.

Aster yellows was observed in the Lower Rio Grande Valley near Mission and Santa Rosa; however, the disease was limited in extent as compared to the Winter Garden region, at the time of this survey. One older planting near Mission had 7% infected plants.

The insect vector was observed in all of the infected fields. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20 - December 1.

DISEASES OF CARROTS IN COLORADO: In Denver and Jefferson Counties most of the truck crops have been harvested. Carrots in many areas are being stored or trenched in the fields. A slight amount of soft rot (Erwinia carotovora) occurred on carrots in all fields.

Aster yellows virus disease was prevalent on carrots in the vicinity of Arvada, Jefferson County. -- E. W. Bodine, Emergency Plant Disease Prevention Project. October 11.

DISEASES OF CARROTS IN CENTRAL CALIFORNIA: Three days were spent in the vegetable-growing areas near Salinas, Watsonville, and Hollister, during the week ending November 20. Carrots in this area were being pulled both for shipment and for dehydration. There were reports from the Agricultural Commissioner at Salinas that a soft rot (probably Erwinia carotovora) had caused severe damage earlier in the season in some fields that had been too heavily irrigated. One large field had been plowed up because of this rot. Only a trace was seen during this survey.

Alternaria blight (Alternaria carotae) was found to be more common than Cercospora blight. It was more severe in the older plantings and the actual loss was slight.

Cercospora blight (Cercospora carotae) was found in a number of fields but the damage was slight. -- Horace L. Barnett, Emergency Plant Disease Prevention Project.

CELERY DISEASES IN NEW JERSEY: Diseases were light on celery in Gloucester County, both in open fields and under irrigation. A very slight amount of early blight (Cercospora apii) was observed in a 3-acre field near Huffville and in a 14-acre irrigated field near Mickleton. Some crack

stem due to boron deficiency, and 3 plants with yellow and white variegation (genetic) were observed in the latter field. -- E. A. Walker, Emergency Plant Disease Prevention Project. October 20-23.

CELERY DISEASES IN FLORIDA: In the southern Florida East Coast area, only about 2 acres were seen, east of Princeton near Homestead. The variety was Supreme Golden, planted in late September. Early blight was generally present. Dusting weekly for its control had been under way for 3 or 4 weeks. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

In the Sarasota winter-celery area on the West Coast, aside from reported cases of damping-off, and a few observed old seedbeds showing rootknot (Heterodera marioni), there is little to report on celery as yet. Fields in all stages of growth appear to be in good condition, and planting continues. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

CELERY LATE BLIGHT IN COLORADO: In Denver and Jefferson Counties most of the truck crops have been harvested. Late Pascal celery plantings will all be trenched within the next 2 weeks. Late blight (Septoria apii) was found to be prevalent on all the older leaves in the fields. Control measures were applied and the new stalk and leaf growth in practically all celery plantings was free from infection. -- E. W. Bodine, Emergency Plant Disease Prevention Project. October 11.

CELERY DISEASES IN CENTRAL CALIFORNIA: The acreage of celery in the Salinas Valley is on the increase and considerable interest was shown in the diseases of this crop.

Western celery mosaic (virus) was found to be severe in only one small field. A few other fields showed only scattered diseased plants. It is possible that the disease may become more severe in the younger plantings later in the season.

Aster yellows (virus) was seen on a few scattered plants in fields near Salinas and also near Hollister.

Late blight (Septoria apii) was found in one young field near Hollister. The damage at this time was slight. -- Horace L. Barnett, Emergency Plant Disease Prevention Project. Week ending November 20.

DISEASES OBSERVED ON CRUCIFEROUS CROPS IN NEW JERSEY: The survey was made primarily in Gloucester County with short visits into the adjacent counties of Camden, Atlantic, Salem, and Cumberland.

In Gloucester County, black rot (Xanthomonas campestris) was very slight in several fields of late cabbage observed near Gibbstown. In the Huffville area 8 fields were examined, of which 3 were practically free from diseases; one 3-acre field and a 2-acre field nearby had about 50% of the plants affected by black rot, and the crop was being plowed under; in another 3-acre field yellows (Fusarium conglutinans) was causing about 1% loss. In a small planting near Swedesboro about 5% cracked heads and 1% black rot was noted. Small plantings in the Mickleton, Newfield, and Clayton areas were practically free from diseases.

In a 1-acre field of horseradish in Barnsboro, Gloucester County, the

leaves were severely affected with downy mildew (Peronospora parasitica).

Fields of turnips were observed in all sections visited, but diseases were not noticed until the Newfield area of Gloucester County was reached. Two fields were seen, one under irrigation, in which leaf spot (Cercosporella albo-maculans) was very severe on the lower and middle leaves, being somewhat worse in the irrigated field. These fields also showed about 2% mosaic (virus). Of several fields observed near Elmer in Salem County 2 showed a slight amount of leaf spot. -- E. A. Walker, Emergency Plant Disease Prevention Project. October 20-23.

BLACK ROT OF CAULIFLOWER ON THE GEORGIA COAST: Cauliflower is grown during the winter on a few farms of sedimentary soil (reclaimed rice fields) on the coast of Georgia. One such planting is located near Darien and 2 others near Woodbine. One of the growers from Woodbine visited the experiment station in early November for a diagnosis of diseased plants from his field. The trouble was identified by Dr. W. D. Moore as blackrot [Xanthomonas campestris]. It was learned from the grower that the farmer at Darien and the other grower at Woodbine used seed from the same source as he; also, that he had not treated his seed. The resulting investigation was rather interesting.

The first thought was that should the source of infection be the seed the other crops would probably have the disease. However, the other growers had treated their seed and no indication of blackrot was found in either of their crops. The assumption then was that if the seed were the source of infection the seed treatment used by the other growers had effectively controlled it. The pattern of the disease in the field discredited this idea. About 15% of the plants were dead and nearly 100% of the remaining plants were diseased (the losses will no doubt be heavy). The dead plants were not scattered over the field as one would expect from disease-contaminated seed. Rather they were confined to strips in rows, indicating that the plants became infected in spots in the seed bed. Further questioning revealed that turnips and rutabagas were grown the year before in the area where the cauliflower plant bed was located and that they "had something" that resembled blackrot. Thus the case was closed.

Bacterial leaf-spot (Bacterium maculicolum) [Pseudomonas maculicola] later developed uniformly over the planting at Darien. It is not causing appreciable damage. --G. M. Stone, Emergency Plant Disease Prevention Project. November 19.

DISEASES OF CRUCIFEROUS CROPS IN FLORIDA: Central and Northern Florida -- One grower at Wauchula, Hardee County, with about an acre of cabbage experienced an unusual type of loss while the plants were still small. In the seedbed the plants showed no evidence of disease, but soon after being set in the field they wilted and died, apparently from Rhizoctonia root rot. About 25 to 30% of the plants that had been set out died from this trouble and the grower had replanted 3 times. Rhizoctonia was isolated by Dr. W. B. Tisdale from specimens of dying plants sent in from this field. (October 25-30.)

In the muck soil area at Zellwood, Orange County, seedlings on the later-planted half of a 4-acre, close-row planting of cabbage seedlings were so severely attacked by downy mildew (Peronospora parasitica) that they promised to be a total loss unless control measures were undertaken

promptly. Twenty acres of cabbage just beginning to head proved free from diseases. About 1/3 of another 15-acre field was affected by injury due to recent cold weather. In a 17-acre tract of month-old cabbage seedlings the plants were backward, apparently partly because of lack of rain since the seeds were planted, but probably also because of the poorly prepared seedbed. A little downy mildew was also apparent in this field and there was some local slight frost injury. (November 12) -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project.

East Coast of Southern Florida -- Fourteen acres of cabbage were observed, near Hollywood and between Princeton and Homestead. Xanthomonas campestris, black rot, was scattered in distribution, generally light in prevalence but starting to defoliate 1 acre in which the cabbage was heading with many half-grown heads present.

Peronospora parasitica, downy mildew, was starting to defoliate an acre of half-grown cabbage plants near Hollywood. Scattered light infection occurred in 6 acres of young plants near Princeton, but a young seedbeed here was almost ruined. The disease was general in a second small seedbeed seen near Miami.

Two acres of kale, with plants about 10 inches tall, and one seedbed, were observed near Hollywood. Black rot was general but light throughout the 2-acre field. Downy mildew was scattered throughout the 1-acre seedbed. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

West Coast -- Cauliflower is not extensively planted, and where observed seems to be in good condition. Cabbage, where growing in the field and attaining size, is apparently quite free from any serious trouble at the present time. Downy mildew is rather common on the oldest leaves near the ground, but the vigorously growing upper portion of the plants appears to have grown out of the disease. In the seedbeds, however, this was generally a serious trouble, the degree of loss depending on local conditions, application of sprays, etc. In some beds the infections were confined mostly to the cotyledons, or to an additional leaf or two, and the plants later grew away from the disease; in other beds the infections were so general that a large portion of the plants were rendered unfit for setting. One series of 4 beds in the Sarasota area was reported by the grower to have been a total loss, mostly from this cause.

Isolated instances of damping-off and of wire stem, perhaps both due to Rhizoctonia [solani], were observed in a few remaining beds in the Venice area. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

BLACK ROT OF CABBAGE IN LOUISIANA: In Rapides Parish 1 10-acre field showed about 1% of the plants affected by black rot. Only light hydathode infection was evident. One 5-acre field showed a trace and 1 20-acre field showed no black rot. -- L. H. Person, Emergency Plant Disease Prevention Project. November 8-13.

DOWNY MILDEW AND OTHER DISEASES ON CABBAGE AND CAULIFLOWER IN TEXAS: Downy mildew (Peronospora parasitica) was observed causing slight to

moderate defoliation in a small cabbage planting north of Weslaco (Hidalgo County) and similar infections were evident in other plantings in the Lower Rio Grande Valley region.

Typical symptoms of mosaic (virus) were observed on cabbage plants in 3 or 4 plantings; in no instance, however, was the loss more than a few plants.

Downy mildew spots were observed on the lower leaves of cauliflower in several instances. Near Winter Haven a slight amount of defoliation was noted, but the loss was negligible. Leaf spot (presumably Alternaria brassicae) [A. circinans, if the black leaf spot is meant] was observed causing negligible damage in 2 plantings in the Lower Valley. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20-December 1.

DISEASES OF CRUCIFEROUS CROPS IN THE SALINAS TRUCK CROP AREA OF CENTRAL CALIFORNIA: During the week ending November 20, three days were spent in the vegetable-growing areas near Salinas, Watsonville, and Hollister.

Traces of downy mildew (Peronospora parasitica) were found on cabbage, leaf mustard, and radish.

White rust (Albugo candida) was found on leaf mustard and radish but was doing no damage.

Ring spot (Mycosphaerella brassicicola) was common on cabbage and brussels sprouts at Marina. -- Horace L. Barnett, Emergency Plant Disease Prevention Project.

CUCUMBER DOWNY MILDEW AND OTHER INJURIES IN FLORIDA: Central Florida -- Wauchula, the cucumber-growing center of Hardee County, was visited early in the shipping season. Early fall plantings of cucumbers and other vegetables in this section had suffered considerable damage and retardation as a result of heavy rains early in the fall but most fields appeared to be in good condition at the time of inspection. Some few still had not progressed far enough for picking. The plantings were widely scattered and all were small, lack and cost of labor restricting them to a size that could be handled without outside help. Downy mildew (Pseudoperonospora cubensis) was the only disease observed although aphids tended to be troublesome in a few plantings. Dusting and spraying for control of downy mildew and aphids in the plantings examined appeared to be relatively ineffective as the coverage was confined largely to the tops of the leaves.

Of the plantings examined in the Wauchula section, 2 were free from disease, including the largest field observed in this section, about 5 acres. Four showed from traces to moderate amounts of downy mildew. A 1-1/2-acre field was found to be badly attacked by downy mildew, the infection being estimated to be of such severity as to reduce the yield by 50%, since picking had not begun. A much younger planting of about 1/2 acre nearby on the same property showed an alarming degree of mildew development.

At Bowling Green (Hardee County) a 1-acre planting showed considerable downy mildew. Near Clearwater (Pinellas County) a 10-acre planting was found on newly cleared land. This exhibited a little aphid infestation in spots and there was considerable leaf injury throughout the planting from spray burn and wind damage, but no diseases. -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project. October 25-30.

Downy Mildew and Low Temperature Injury to Cucumbers in the West Coast Area -- Aside from the frequently observed wind or aphis injury to foliage, the main trouble on cucumbers seems to be the damage from downy mildew. This was observed wherever fields were visited, and in some cases the loss to the grower was considered to be really important. One grower at Venice, with a planting of 40 acres of a variety for the dill-pickle trade, claims a 50% reduction in yield due to downy mildew, based on a cutting season of 4 weeks instead of a normal 8 weeks. In this same area occurred also a striking type of injury to the fruits, considered to be due to low temperatures. The entire exposed area of the fruits was somewhat sunken, with a scalded or glazed appearance, and most often the damage was sufficiently severe to exclude the fruit from the higher grades. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

CHOANEPHORA ROT OF SQUASH IN MARYLAND: Blossom rot (Choanephora cucurbitarum) was observed on most young squash and on many of the half-grown fruits of the yellow straightneck type, in Montgomery County (October 13-15). -- E. A. Walker, Emergency Plant Disease Prevention Project.

DISEASES OF SUMMER SQUASH IN FLORIDA: Frost Injury and Diseases in Central and Northern Florida -- A 10-acre planting of yellow crookneck and pattypan squash examined November 8 near Lowell, Marion County, was characterized by a very poor stand of plants in general, which the grower stated was due to a heavy washing rain that occurred while the plants were very young. Downy mildew (Pseudoperonospora cubensis) had developed to a moderate extent on the leaves of scattered plants but had not become sufficiently serious as yet to result in any particular crop curtailment. Cucumber mosaic (virus) was noted on a few fruits. A trace of blossom and fruit rot (Choanephora cucurbitarum) also was noted.

On November 15 a number of plantings of yellow crookneck squash were examined at various points. All had been more or less seriously damaged by frost since November 8. A 20-acre planting at McIntosh, Marion County, showed considerable downy mildew which seemed to have little effect on crop production. A slight loss was caused by Choanephora blossom and fruit blight. The frost had damaged the plants considerably, causing about 40% loss. However, the less severely injured plants still appear capable of producing fruit. In a 2-acre planting south of McIntosh it was estimated that the recent frosts had caused about 60% damage; there was also some downy mildew but this had caused little damage. A 1-1/2-acre field between McIntosh and Reddick was practically killed by frosts; a 2-acre planting between Irvine and Flemington was completely killed; and 4 additional plantings in the vicinity of Flemington, totaling about 10 acres, were practically killed. -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project.

Mosaic in East Coast Plantings -- Thirty-eight acres of straightneck squash were seen, all near Hollywood except for one acre at Homestead. On 18 acres 100% infection was causing a total loss and the owner was planning to disk the plants up. He estimated his loss at $1000 to date; in the same field last year he estimated 25% mosaic in squash. Another 15 acres had 100% mosaic with an estimated 90% loss. The other 5 acres had about 7% mosaic. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

West Coast -- Occasionally a mild spotting of the lower leaves was observed, perhaps due to downy mildew, but no serious cases were encountered and it was probably not of importance. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

DISEASES OF SQUASH IN TEXAS: Downy mildew (Pseudoperonospora cubensis) was observed in several fields. Nearly 100% loss of plants was noted in a small field near Mercedes. In the Winter Haven area losses fluctuated from 1% to 15%.

Powdery mildew (Erysiphe cichoracearum) was widespread and prevalent, affected plants being observed in nearly every field surveyed. In one late planting the disease was destructive, causing a loss of nearly 2% of the plants; however, in most instances economic loss was slight as the fruit had been harvested.

Common cucumber mosaic (virus) was observed in the Weslaco area and also near Winter Haven. Loss due to this disease was slight.

The rootknot nematode (Heterodera marioni) was present on all of the squash plants observed in a small field northwest of Laredo. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20-December 1.

In a field of mixed crookneck and pattypan squash near Carrizo Springs (Winter Garden area) all foliage was being killed by powdery mildew.

A 20-acre field of squash near Edinburg, Hidalgo County (Lower Rio Grande Valley) was severely attacked by downy mildew. From one-fourth to all of the foliage of every plant was dead from the disease. About 5% of these squash plants showed mosaic symptoms. -- G. M. Watkins, Emergency Plant Disease Prevention Project. Weeks ending November 20, November 27.

EGGPLANT DISEASES IN GLOUCESTER COUNTY, NEW JERSEY: Thirteen fields representing 30 acres were visited in the Swedesboro-Bridgeport area. Harvest was about complete and diseases observed were on the fruits and plants remaining in the field. Phomopsis fruit rot (Phomopsis vexans) varied from 2 to 50% with an average of 20.5% for all the fields; a slight amount of stem canker and considerable leaf spotting were also observed. Near Mickleton 50% fruit rot was noted in a 3-acre field; 10% of the plants had been killed by stem canker and the leaves were severely affected. Cracked fruit was abundant in one field near Bridgeport and 100% was observed in an irrigated field near Wolfert. Wilt (possibly Fusarium) occurred in 7 of the fields visited. In one field near Rapaupo counts showed 16, 14, 26, or an average of 19% of plants dead or dying from wilt. Other fields showed varying amounts: near Mullica Hill 15% in one field and 4% in a nearby field; from 1 to 2% in 2 fields near Swedesboro and in 1 near Mickleton. -- E. A. Walker, Emergency Plant Disease Prevention Project. October 20-23.

EGGPLANT DISEASES OBSERVED IN FLORIDA: Northern Florida -- At Wauchula, Hardee County, a 2-acre field showed fully 50% plant loss from tip-over (Phomopsis vexans). Plants were attacked and killed at all stages from young plants to those almost ready for the first picking. Two small plantings were found in another property at Wauchula. In one of about 3/4 acre tip-over had killed about 6% of the plants. In the other, of 2 acres, there was a heavy loss from this disease in the first 2 rows on the east

side, much less damage in the next 2 rows, and the balance of the field was practically free from plant loss. (October 25-30).

A number of larger fields were examined in Marion County, November 8. A 10-acre planting at Lowell was found to show about 35% plant loss from the basal girdling and tip-over caused by Phomopsis vexans. Little fruit rotting and no appreciable leaf spotting was apparent. All the plants in a circular, depressed area of about 1/2 acre had died while quite young from waterlogging of the soil following heavy rain.

A 40-acre planting on another property at Lowell also exhibited considerable loss from Phomopsis vexans, estimated at about 15% loss of plants from basal girdling and about 15% loss of fruit on the remaining plants from decay. Extensive infection of the root systems by nematodes (Heterodera marioni) was an important factor in the reduction of plant growth and crop production.

A 10-acre planting at Martin, from which it was said that no fruit had been picked, represented a total loss. The plants in this field were definitely stunted and unproductive in general. Numerous non-bearing plants pulled up for examination showed an exceptionally severe degree of nematode (Heterodera marioni) attack and rotting of infected roots, and a large number of plants had already died. A considerable number of these were found to have been pulled up and carried out and left at the margin of the field. Both tip-over and bacterial wilt (Pseudomonas solanacearum) had taken a heavy toll of the plants less severely affected by nematodes.

A 23-acre planting at Reddick showed fully 75% plant loss due to tip-over. The grower stated that the plants exhibited a diseased condition in the seedbed.

Another unusually large planting of about 50 acres near Reddick proved to be by far the best and most productive field examined during the day. The loss from plant girdling by Phomopsis vexans was negligible, but fruit stalk and calyx lesions were causing considerable rotting and dropping of fruits. Since it was not learned how much fruit had been picked already it was not possible to appraise the percentage of loss from this disease. In one area of the field some defoliation and dropping of sound fruits was noted, apparently the result of slight frost injury.

On November 12 it was noted that frosts of the previous few nights had seriously damaged eggplants in the few plantings seen from the road from Micanopy south to Lowell in Alachua and Marion Counties. The 50-acre planting near Reddick was visited again on November 15 to ascertain the effect of the frost, and it was found that plants throughout the field were extensively damaged although fruit remaining on them was still being picked for shipment. Growers of fall crops in this section take a chance with the advent of cold weather, hoping to gather a profitable crop before frost damage occurs.

On November 15 several plantings were examined in Alachua County. Dry weather has prevailed for the past few weeks. A half-acre field at Evinston showed a loss of 85% of the plants from Phomopsis blight and the remaining plants were about ruined by frost. A 3-acre field showed virtually no plant loss but about 3% fruit loss from Phomopsis. The plants were so badly injured by frost, however, that there would be no further fruit production.

A 15-acre planting in the same section showed considerable stem infection but little plant loss from Phomopsis blight. Picking in this field

began the last week in September and a total of 9 pickings had been made. The considerable amount of fruit infection that had developed within the past 3 weeks probably did not result in over 10% loss since the bulk of the crop had already been picked and shipped. The recent frosts caused considerable damage to the plants but it will be possible to continue to pick fruit for some little time yet, assuming no further damage from frost occurs. Some loss from unsightly scars and cracking at the lower end, caused by thrips feeding on the fruit while it was still very young, occurred in one area of about half an acre. Slight evidence of root infection by nematodes was also noted. The farmers who planted this field stated that they had been growing eggplants in this section for nearly 10 years and considered that the present crop was the freest of any from diseases. They push the plants in the seedbed and set out the best of them as early as possible, and rotate their plantings on different fields from year to year, allowing them to lie fallow between crops. -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project.

East Coast -- Six acres were observed below Pompano. Phyllosticta solani, leaf spot, was present in small amounts in 4 acres. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

West Coast -- Most fields observed were apparently in good condition. Several fields in Manatee County (Tallevast and Terra Ceia areas), however, suffered serious damage to plants and fruit due to Phomopsis vexans. Tip-over, stem cankers, and rotting fruits were very common. Most of the plants were affected in some way, and the loss is unquestionably important. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

EGGPLANT DISEASES OBSERVED IN TEXAS: Yellows (virus) was observed in all of the eggplant plantings surveyed, infection varying from 1%, to nearly 100% in a planting near Winter Haven. An average infection of 10% was observed in plantings in the Winter Garden area as well as in the Lower Rio Grande Valley.

The rootknot nematode (Heterodera marioni) was prevalent and widespread in eggplant fields. The most severe infestation noted was in a commercial planting near Laredo, Webb County. Most of the plants in this field were infected, and the loss could be estimated at nearly 5%.

Wilt (tentatively identified as due to Verticillium albo-atrum) was observed in several fields. Losses varied from a trace to nearly 5%. In a planting northwest of Laredo a loss of 5% could be attributed to this disease.

Leaf spot caused by Phomopsis vexans was noted in several instances but fruit and stem lesions were not observed and the amount of loss was negligible. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20 - December 1.

Near Poteet, Atascosa County, 3 fields of eggplant totaling about 5 acres were examined. Yellows (virus) occurred in all, ranging from about 11% infected plants in one to 70% in the worst field. -- G. M. Watkins, Emergency Plant Disease Prevention Project. November 15-20.

FRUIT ROT OF EGGPLANT IN OREGON: Ascochyta lycopersici was found causing a stem-end rot of ripe fruit in a small planting in the vicinity of Corvallis, November 12. -- Lytton W. Boyle, Emergency Plant Disease Prevention Project.

DISEASES OF ENDIVE IN THE SALINAS TRUCK CROP AREA OF CENTRAL CALIFORNIA: Only one field of approximately 10 acres was seen, in which there was an estimated loss of 10% due to Sclerotinia rot (S. sclerotiorum) and Botrytis rot (Botrytis cinerea). Often both fungi were present together. There was also considerable loss here due to aster yellows (virus). -- Horace L. Barnett, Emergency Plant Disease Prevention Project. Week ending November 20.

DISEASES OF LETTUCE IN OHIO GREENHOUSE CROPS: During the period November 15 to 20 greenhouses in the vicinity of Toledo were inspected for the presence of plant diseases. Six lettuce houses covering an area of 27-1/2 acres were seen. Three varieties of leaf lettuce are planted in this area, each because of its growth habits: U. S. No. 101 is planted early because it will not bolt and form seed-heads during hot weather; Tipburn Resistant is next used during the dark cool winter months because, as the name indicates, it does not burn along the leaf edges; Grand Rapids is used to finish the season because it will grow in a satisfactory manner in hot cloudy weather during the spring months.

In all 6 of the houses inspected tipburn (nonparasitic) was present, damage ranging from a trace to so severe that the grower was having difficulty in harvesting a profitable crop. The causes of tipburn were more or less obscure. However, 3 factors seemed to be associated with the trouble, namely,

(1) Improper watering, either too much or too little, seemed to contribute to the tipburn condition.

(2) A period of cloudy weather. The strain U. S. 101 is likely to show tipburn during cloudy wet weather.

(3) Soil sterilization just before planting the crop changes the soil composition in such a manner as to favor the development of tipburn.

Drop (Sclerotinia sclerotiorum) was present in most of the houses seen and was beginning to be serious in one house covering 9 acres. This grower sterilized by the inverted pan method instead of tile and the heat did not penetrate sufficiently to kill all the sclerotia of the fungus. -- M. R. Harris, Emergency Plant Disease Prevention Project.

LETTUCE DISEASES IN INDIANA GREENHOUSES: Six greenhouses in the vicinity of Indianapolis were visited during the week ending November 27. Lettuce was the principal crop in these houses although some radishes also were being grown. The soil in all of the houses had been sterilized by steaming or by treatment with chloropicrin. No fungus diseases were found on the lettuce. In 2 houses the plants in small areas in which the soil had apparently been over-sterilized were severely stunted. In 3 houses about 0.5% of the plants were infected with mosaic (virus). -- R. C. Baines, Emergency Plant Disease Prevention Project.

LETTUCE DISEASES IN CENTRAL CALIFORNIA: During the week ending November 20, 3 days were spent in the vegetable-growing areas near Salinas,

Watsonville, and Hollister. The numerous fields of lettuce examined varied greatly as to the amount of disease present. The older plantings, now being harvested, were in general more severely damaged. The 3 diseases causing most loss were drop, Botrytis rot, and big vein. In a few fields already harvested about 50% of the crop had been left in the field, mainly because of these diseases.

Drop (Sclerotinia sclerotiorum or S. minor) was common in the area and severe in some fields, causing as high as 10% loss in some places.

Botrytis rot (Botrytis cinerea) was more common than drop in the fields examined. Some older fields showed as much as 15 to 20% loss. However, it was not possible to determine how much of this infection was secondary following other diseases. It seemed likely that Botrytis commonly followed spotted wilt and big vein.

Some fields showed as much as 30% big vein (virus) while others showed practically none. Infected plants were a total loss because of the failure to form heads. There seemed to be some difference in the percentage of infection even within the same field.

Downy mildew (Bremia lactucae) was commonly observed but infection was mostly confined to the older leaves and was doing only slight damage.

A few scattered plants with spotted wilt (virus) were present in most fields near Salinas. The loss was not great. Aster yellows (virus) also occurred on a few scattered plants. -- Horace L. Barnett, Emergency Plant Disease Prevention Project.

RUST ON PEAS IN WYOMING: Rust (Uromyces fabae) was found on peas for the first time in the State of Wyoming, on a few plants on the Experimental Farm, at Laramie. -- E. W. Bodine, Emergency Plant Disease Prevention Project. October 11.

PEPPER DISEASES IN GLOUCESTER COUNTY, NEW JERSEY: This crop was injured by frost and harvest had practically ceased. In the Bridgeport, Paulsboro, and Gibbstown areas, 41 fields were examined, with 95 acres. Sunscald on the fruits remaining was conspicuous in each field, from 1 to 40%, averaging 7%, of the fruit being affected. Wilt (possibly Fusarium) affected from 1 to 20%, averaging 3.3%, of the plants. In one field counts were made of 10, 10, 20, 24, 0, 15, averaging 13%, of wilt. Mosaic (virus) also occurred in this field, 1% of the plants being infected. Near Swedesboro one plant was found with variegated leaves (genetic).

One field with 3% wilt was observed in the Aura area; one near Mullica Hill with 1%; and a 5-acre field near Franklinville with 3%. Fruit drop and sun scald were abundant in the Aura and Ewan district.

In the Newfield area several fields of chili peppers were observed. Bacterial leaf spot (Xanthomonas vesicatoria) had been very destructive, causing about 20% of the leaves to drop. Cercospora leaf spot (Cercospora capsici) occurred on about 50% of the leaves; in some cases the petiole was affected. About 10% wilt was present in one field, and a few scattered mosaic-affected plants were also observed in this field. -- E. A. Walker, Emergency Plant Disease Prevention Project. October 20-23.

LEAF SPOT OF PEPPER IN FLORIDA: Twenty-six acres of peppers were observed on the East Coast between West Palm Beach and Pompano. With one exception the plants appeared to be disease-free but were irregular in

size. Cercospora capsici, leaf spot, was present in low areas in a 1-1/2 acre field. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

PEPPER DISEASES OBSERVED IN LOUISIANA: On the Cayenne variety, infection by Sclerotium rolfsii varied from a trace to 1% in various fields. Cercospora capsici was present in all fields, in light, moderate, or heavy amounts, with some defoliation in fields with heavy infection. In one field with heavy leaf infection, definite cankers caused by the Cercospora were observed on the branches; from 1 to 5 small branches had been killed on 20 to 25% of the plants. Anthracnose [organism not designated] could be found on the pods in all fields, infection varying from a trace to 2%.

Traces of Cercospora leaf spot and of southern blight were found in fields of the Sport variety.

A trace of Cercospora leaf spot occurred on the Tabasco variety. From a trace to 3% of the plants in various fields were killed by a wilt similar to the wilt of chili peppers reported by Leonian. The organism causing the disease has not been determined definitely. -- L. H. Person, Emergency Plant Disease Prevention Project. October 18 to 23.

PEPPER DISEASES IN TEXAS: Wilt (Verticillium albo-atrum) was prevalent and widespread. Losses varied from a trace to 15%. In the most severely affected planting observed, in the Laredo area, the disease had killed 35% of the plants in localized spots but the total loss was not more than 15%.

Common mosaic (virus) was observed in several fields in the Winter Garden region and the Lower Rio Grande Valley, causing losses varying from 1% to nearly 100%. In a 2-acre planting north of Santa Rosa, all of the plants were infected, with a probable loss of 100%.

Plants showing curly top (virus) symptoms were observed in 2 fields; in 1 field, near Laredo, the loss could be estimated at 0.5%.

Three or four plants showing symptoms of cucumber mosaic (virus) infection were observed in this same planting near Laredo. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20 - December 1.

At Batesville, Zavala County, a field of about 120 acres of pepper showed a trace of Cercospora leaf spot (C. capsici). -- G. M. Watkins, Emergency Plant Disease Prevention Project. November 15-20.

RHUBARB DISEASES IN THE COASTAL AREA OF CENTRAL CALIFORNIA: Two plantings of rhubarb on adjoining farms at Marina (Monterey County) were examined at the suggestion of the Agricultural Commisioner. In both fields some disease was causing a dwarfing of the plant and some curling of the younger leaves, and in both also the trouble was spreading in a manner typical of a soil-borne organism. No apparent cause for this disease has been determined.

One small field showed heavy infection with rust (Puccinia phragmitis). The same leaves collected for the rust showed some Phyllosticta leaf spot (Phyllosticta straminella). -- Horace L. Barnett, Emergency Plant Disease Prevention Project. November 20.

SPINACH DISEASES IN TEXAS: In all spinach fields observed near San Antonio, Bexar County, many plants showed chlorosis of the older leaves which did not seem related to a pathogen.

At La Pryor, Zavala County, one field of 20 acres of early spinach showed a trace of white rust (Albugo occidentalis) and less than 1% of the plants were infected with curly top (virus).

At Batesville, Zavala County, a field of about 40 acres of early spinach showed white rust well started in spots here and there. Damage was negligible at the time of the observation, but the potentialities for further spread within the field and to neighboring much younger fields are, of course, very great. In the same field a trace of blue mold [downy mildew] (Peronospora effusa) was found, as well as less than 1% of curly top. (November 15-20).

A 50-acre field was observed near Robstown, Nueces County. Sori of Albugo occidentalis were just beginning to appear on occasional plants. Another field (20 acres) of early spinach was examined near Edroy, San Patricio County. White rust occurred in spots throughout this field. (Week ending November 27). -- G. M. Watkins, Emergency Plant Disease Prevention Project.

SPINACH DOWNY MILDEW IN WESTERN WASHINGTON: Many fields of the late crop had been disced into the ground in the Sammamish Valley. These were reported to be lost on account of downy mildew (Peronospora spinaciae) [P. effusa], which was evident on stray plants still standing in such fields. Unless fields are harvested soon, mildew will ruin the crop since it was scattered through most fields observed. -- Lytton W. Boyle, Emergency Plant Disease Prevention Project. October 25-29.

DOWNY MILDEW ON SPINACH IN THE SALINAS AREA OF CENTRAL CALIFORNIA: Downy mildew (Peronospora effusa) was causing a moderate amount of damage in the Salinas area. Infections were mostly confined to the older leaves. -- Horace L. Barnett, Emergency Plant Disease Prevention Project. Week ending November 20.

SWEETPOTATO DISEASES IN LOUISIANA: A trip was made through the commercial sweetpotato growing area of Louisiana. Shipping points where sweetpotatoes were being washed and packed for shipment, and storage sheds were visited in St. Landry, Lafayette, and Acadia Parishes. St. Landry Parish is the center and the largest shipping point, with a yearly shipment of from 2000 to 2300 cars by rail, of which 1200 to 1500 cars are shipped from the town of Sunset. Sweetpotatoes were observed at the various sheds on the carrier belts after being washed. Soil rot, Actinomyces ipomoeae, was the most prevalent and widespread disease noted. From a trace to 2-3% of every lot observed showed lesions. The most severely lesioned and misshapen roots are discarded when they are picked up in the fields, so that only a small amount of the sweetpotatoes that pass through the washing machines are graded out on account of this disease, the loss being only a trace.

In the Lonville and Arnaudville area where the soil is somewhat heavier than in other parts, scurf, Monilochaetes infuscans, is more widespread than in other sections. The loss from scurf on grade in most lots observed would only be a trace; however, occasional lots were seen where

up to 0.5% of the sweetpotatoes would be graded out of U. S. No. 1 grade on account of this disease.

Only a trace of black rot, Ceratostomella fimbriata, was observed in any one lot. At one shed the shipper stated that he had washed and packed 1 lot of 100 crates and held them 4 days before shipping. When inspection was made at the time the car was ready to be shipped, so much black rot had developed that the entire 100 crates was a total loss. This is often the case when sweetpotatoes are held for a few days after washing before shipment is made.

One lot of 70 crates that had been dug about 2 weeks had developed 3% Diplodia rot [Java black rot, D. tubericola].

At the time of this survey the storage houses were only partially filled, owing to the market demand and to the demand for potatoes for dehydration. The 4 dehydrating plants in operation will consume an estimated 10,000,000 pounds.

Storage diseases observed were soft rot, Rhizopus sp., and Java black rot, Diplodia. Only a trace of either disease was noted since sweetpotatoes had been stored only a short period of time.

During harvest 2 heavy prolonged rainy periods occurred. Sweetpotatoes in low ends of numerous fields, where water stood for several hours and the soil remained saturated for a number of days, were a total loss, breaking down with a soft, watery rot with which Diplodia and Rhizopus were often associated; while in other cases only bacterial soft rot was present. -- L. H. Person, Emergency Plant Disease Prevention Project. November 15-20.

TOMATO DISEASES IN FLORIDA: East Coast of Southern Florida -- About 50 acres were examined in the field; others were seen from the road.

Most of the plants were small, pre-bloom, and free from early blight (Alternaria solani). The disease was starting to develop in 2 older fields.

Fusarium bulbigenum var. lycopersici, wilt, was actually seen in only one field, on rock land near Homestead where several acres will be largely lost. According to Dr. Geo. D. Ruehle the disease is a problem on some land of this type near Homestead, but occurs infrequently on the marl soils.

Mosaic (virus) was seen on some 35 acres, chiefly around Hollywood. Usually it was present on not more than 10% of the plants, with small loss, but in 5 acres the loss was estimated at 10%. -- R. A. Hyre, Emergency Plant Disease Prevention Project. November 15-20.

Florida West Coast -- Fields in most areas appear to be generally in good condition as yet. A few scattered instances of yellowing were observed in passing; and 2 fields, widely separated, contained many plants showing symptoms typical of Fusarium wilt. Losses in these fields will undoubtedly be considerable. Instances of leaf spots due to Alternaria [solani], Cladosporium [fulvum], and Stemphylium [solani] have also been observed, but are probably not important as yet. -- F. P. Schlatter, Emergency Plant Disease Prevention Project. November 15-27.

TOMATO DISEASES IN TEXAS: Early blight (Alternaria solani) was the most widespread disease in the 700 to 800 acres of tomatoes observed.

Moderate to severe defoliation was evident in various plantings. In the vicinity of Weslaco considerable defoliation could be attributed to this fungus; on the whole, however, damage was slight.

Leaf spot caused by Septoria lycopersici was observed in a single planting near Mission, where it was causing approsimately 15% defoliation.

Plants affected by wilt (Fusarium bulbigenum var. lycopersici) were observed in 2 fields; one was a 4-acre planting south of Santa Rosa with less than 2% loss.

Rootknot (Heterodera marioni) was observed in several fields. It was causing considerable loss in a 2-acre planting near Laredo, and typical symptoms were observed in other fields, but little economic loss resulted.

Virus diseases were apparent in most fields observed. Characteristic symptoms of aster yellows, curly top, mosaic, spotted wilt, and tipblight were noted. Tipblight was causing severe losses in 2 fields, both located between Laredo and Zapata, one a 50-acre field with approximately 20% of the plants infected, the other of nearly 85 acres with almost 25% tipblight. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20 - December 1.

At Pleasanton and Poteet, Atascosa County, considerable acreages of tomatoes were seen. Early blight was present everywhere but had not caused serious damage. In one field of about 3 acres nearly all plants were dying. Almost every plant examined showed rootknot, Fusarium wilt, and southern blight (Sclerotium rolfsii).

At La Pryor, Zavala County, a field of about 10 acres showed a trace of early blight on all plants. All plants in this field were suffering from chlorosis which was possibly related to soil alkalinity.

In a field of about 100 acres at Batesville, Zavala County, every plant examined showed foliage symptoms resembling those of spotted wilt. No fruit symptoms were seen.

In an experiment station plot of about one acre at Winter Haven, Dimmit County, nearly all the plants showed mosaic and less than 1% showed curly top.

A trace of early blight was observed in 2-acre field near Edinburg, Hidalgo County. -- G. M. Watkins, Emergency Plant Disease Prevention Project. Weeks ending November 20, November 27.

TOMATO DISEASES IN OHIO GREENHOUSES: During the period November 15 to 20 greenhouses in the vicinity of Toledo were inspected for the presence of plant diseases. Two tomato houses covering 14-1/2 acres were seen.

Fusarium wilt (Fusarium bulbigenum var. lycopersici) occurred on a few plants in both houses inspected. Steam sterilization of the soil keeps it from becoming a serious problem.

Leaf mold (Cladosporium fulvum) was beginning to be serious in one house. About a third of the leaves, mostly on the lower stems, were killed. Infection was beginning to show all over the plants and the grower said that the fruits were not so large as they would be on healthy vines. No control measures were being used since the grower expected to harvest a full crop in a few more weeks and then discard the vines.

Mosaic (virus) was present on almost every plant but was doing no damage. Occasionally a plant showing a fern-leaf type of mosaic was found,

indicating that cucumber mosaic may have infected the plants. Last year fernleaf was serious in this area.

A few plants showing blossom-end rot (physiogenic) were seen. -- M. R. Harris, Emergency Plant Disease Prevention Project.

CORN EAR DISEASES IN SOUTHEASTERN PENNSYLVANIA

Leon J. Tyler

A total of 59 different lots of corn, distributed over 7 counties in southeastern Pennsylvania were examined for ear rots and other troubles. (See Table.)

Fusarium ear rot (caused by Fusarium moniliforme) was noted in all lots examined. The percentage of ears in the different lots that exhibited the disease ranged from 1 to 15. In almost all cases its presence was associated with injuries caused by the corn ear worm and/or the corn borer. Seldom was more than 0.25% affected so that actual loss appears not to be large even though the prevalence of the disease was high. Of course, such corn stored under improper conditions may well undergo further destruction.

Gibberella ear rot (caused by Gibberella saubinetii) [G. zeae] was found in 15 of 59 different lots. The percentage of affected ears ranged from 0.5 to 2. In general the loss due to this pathogen appeared insignificant.

Diplodia ear rot (caused by Diplodia zeae) was found in 27 of 59 lots. The percentage of ears affected ranged from 0.5 to 9. This ear rot appears to be the most destructive corn ear disease in Pennsylvania. In almost all cases an ear affected with the Diplodia disease in practically worthless.

It will be noted that the disease appears to be more prevalent in York County than in others sampled to about the same extent. This is more apparent than real and is doubtless due to the fact that more of the data for York County was obtained by examining corn standing in the field while elsewhere the corn examined was mostly piled in the field or stored in cribs. Experience has shown that, in general, corn already harvested and in piles or in the bin contains few Diplodia-rotted ears, the reason being that since so few of them can be salvaged the Diplodia-rotted ears are discarded during harvest.

Penicillium and Aspergillus ear rots were found in almost all lots. The percentage of ears found affected ranged from 0.5 to 50. In most cases such rots were confined to the ear tips and probably involved no more than 0.25% of the grain.

Basisporium ear rot (caused by Basisporium gallarum [Nigrospora sp.] was found in 11 of 59 lots. Its prevalence ranged from a trace to 1%. This organism appeared to be doing little damage.

Ear smut (caused by Ustilago zeae) [U. maydis] was present in 29 to 59 lots examined. The percentage of ears smutted ranged from 0.5 to 3. Usually not more than 1/3 to 1/2 of the ear was involved so that the loss is even less than the figures indicate.

Other causes of reduction in yield were apparent. Almost every lot of corn contained chaffy, unsound ears, ears that showed pollination failure

Distribution and prevalence of corn ear rots in southeastern and central Pennsylvania 1943.

Date, county and nearest town	Variety	Method of harvesting[a]	Percent of ears affected[d]							
			Fusarium[b]	Gibberella	Diplodia	Nigrospora	Penicillium & Aspergillus	Ustilago zeae	Other[c]
November 7									
Bucks									
Dublin	DeKalb Hybrid	(1	2		0.5		3	0.5	7
Danboro	Yellow Dent[e]	(2	5	0.5	3		7	1	11
Buckingham	Yellow Dent	(3	3			tr.	4		9
Doylestown	Pioneer Hybrid	(2	1		2		3		4
"	Yellow Dent	(4	7	0.5		tr.	9	2	3
November 8									
Montgomery									
Royersford	Pioneer Hybrid	(5	12				0.5	0.5	
Collegeville	DeKalb Hybrid	(6	7				2		20
Zieglersville	Yellow Dent	(1	12				50	0.5	20
"	Yellow Dent	(2	4	0.5	2		7		10
Skippack	DeKalb Hybrid	(1	5			1	7		10
"	Yellow Dent	(2	6		4		3	1	6
November 8-9									
Chester									
Berwyn	Funks Hybrid	(6	4	1	1		5	0.5	9
"	Yellow Dent	(2	3		4		2		13
West Chester	DeKalb 827	(3	7				1	0.5	13
"	DeKalb 628	(1	5		1		2		20
"	DeKalb 827	(2	9	1	2		1		8
Elverson	Pioneer Hybrid	(3	6				tr.		4
Brandywine Manor	Yellow Dent	(1	8				4	2	25
"	Yellow Dent	(2	3	2	2		5		7
Downingtown	DeKalb 825	(1	6			tr.	1	0.5	10
West Grove	Yellow Dent	(1	5				5		30
"	Yellow Dent	(2	3		5	1	7	1	12
Oxford	Yellow Dent	(4	10			0.5	5		25
November 10									
Lancaster									
Oak Hill	DeKalb Hybrid	(3	10		0.5		2		10
"	White corn[e]	(1	3				4	0.5	5
Mechanics Grove	DeKalb Hybrid	(1	3				1		15
"	Pioneer Hybrid	(1	2				5	1	20
"	Pioneer Hybrid	(1	7	0.5			11		10
Lampeter	Yellow Flint	(4	10			1	5		15
Oregon	Pioneer Hybrid	(1	3				6	2	20
Akron	Funks Hybrid	(1	1			1	8		18
Clay	Pioneer 332	(1	3		1		9		21
Penryn	DeKalb Hybrid	(1	7	0.5	0.5		1	0.5	11

Date, county and nearest town	Variety	Method of harvesting	Percent of ears affected: Fusarium	Gibberella	Diplodia	Nigrospora	Penicillium & Aspergillus	Ustilago zeae	Other
Lancaster (cont'd.)									
Manheim	Funks Hybrid	(5	12		0.5		5		2
Landisville	Yellow Dent	(4	3	1			3	2	5
"	Yellow Dent	(2	4		3		5		7
November 11									
York									
York	Funks Hybrid	(1	13	0.5	8		tr.		7
Holz	Yellow Dent	(1	1				2	0.5	2
Dallastown	Yellow Dent	(2	4		2		7	1	6
"	Yellow Dent	(1	7			tr.	5		11
Winterstown	Mixed Yellow Dent	(2	1		5		3	3	10
Stewartstown	Yellow Dent	(2	6	1	3		2		7
"	Yellow Dent	(1	3				4	0.5	9
Shrewsburg	Yellow Dent	(2	3		6		1		11
"	Yellow Dent	(2	2		2	0.5	4		11
York	DeKalb Hybrid	(2	12	2			7	1	25
Yorkana	DeKalb Hybrid	(1	7		1		11		3
Hallam	Yellow Dent	(2	15	0.5	9		5	2	7
Spry	Yellow Dent	(2	7		4				9
Glen Rock	Yellow Dent	(4	6		1		4	0.5	15
November 12									
Dauphin									
Elizabethville	Yellow Dent	(2	1			0.5	0.5	1	40
"	Pioneer Hybrid	(2	3					1	50
Berrysburg	Yellow Dent	(2	3		0.5				30
"	Yellow Dent	(4	7				4	0.5	26
November 13									
Northumberland									
	Yellow Dent	(2	3				9	2	17
Montandon	Mixed	(2	11	2			9	0.5	29
Milton	Penn Hybrid	(2	2				4		18
"	Penn Hybrid	(1	5	1			6	1	9
McEuensville	Yellow Dent	(4	4				10		16

[a]
1. Piles in fields handpicked from stalks in shock.
2. On standing stalks in field.
3. In crib, handpicked from stalks in shock.
4. Piles in field, handpicked from standing stalks.
5. In crib, handpicked from standing stalks.
6. In crib, machine picked.

[b] The presence of Fusarium moniliforme was almost always associated with borer and/or corn ear worm injury. The data concerning Fusarium ear rot appear imposing but it should be remembered that an ear counted as affected usually has not more than 1 to 3 small spots each of which involves about 10 to 20 kernels; the actual damage is, therefore, much less than the figures indicate.

[c] Composite of data for chaffiness, failure of fertilization, and mechanical injury. Much of the damage is the result of late planting, drought, and frost injury; especially this is true for figures given for Dauphin and Northumberland Counties.

[d] Usually about 200 ears were examined in each lot of corn.

[e] Unknown variety listed as Yellow Dent, white corn, etc.

and sterility, together with frost injury and probably drought injury. Frost injury was particularly evident in corn seen in Dauphin and Northumberland Counties. Failure of fertilization appeared next in importance and was doubtless due to changing weather conditions at pollination time.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

CORN DISEASE SURVEY IN NEBRASKA AND KANSAS

Stuart M. Pady

NEBRASKA: The week ending November 6 was spent on corn stalk and ear rot diseases, the first 2 days in company with Dr. J. E. Livingston, Department of Plant Pathology, University of Nebraska, in the two eastern tiers of counties extending northward to Burt County.

Charcoal rot (Sclerotium batatícola) was not abundant, being found in only 11 out of 23 fields, ranging from a trace to 10%, averaging 2%. In many of the plants the rot was in an early stage indicating relatively recent infection. The small amount of this disease in this part of the State is in striking contrast to the counties south of the Platte and to the west which averaged 29% (see PDR 27(21):563. Oct. 22).

In this eastern area Diplodia stalk rot (Diplodia zeae) is abundant, being found in every corn field visited. In contrast with charcoal rot, this disease increases to the eastward, the heaviest infections being found in those counties bordering the Missouri River. In 23 fields examined, the disease ranged from 4 to 50%, averaging 29%, the highest amounts being in Washington County. (In the counties to the west the average was 8.5%).

The amount of lodging shows considerable variation, ranging up to 60% in some fields. There is a fairly good correlation in these counties between the amount of Diplodia stalk rot and lodging, except in certain hybrids that resist lodging albeit diseased.

Root rots were found in some fields with blackened decayed roots often with elongated black bodies on the surface. Isolations have been made from some of this material at Lincoln.

Ears were examined on the plants in the fields, in the wagons in the fields, and in storage cribs. Nigrospora oryzae was present in 23 out of 28 localities ranging from a trace to 18%, averaging 4%; the secondary ears seemed to be especially susceptible. Diplodia zeae was present in 15 localities, ranging from 1 to 15%, averaging 2%. Fusarium moniliforme was found in 14 localities averaging 1%, while Fusarium sp. and various species of molds following insect injury were present in practically all fields and cribs, averaging 7%.

KANSAS: Between November 16 and November 24 the corn stalk and ear rot survey was continued and the northeast and northcentral counties of Kansas were surveyed. Stalk rots were counted in 50 fields in 24 counties. In the counties east of Manhattan Diplodia stalk rot (Diplodia zeae) is the prevalent disease occurring in every county, in 27 out of 28 fields, ranging in amount from 4 to 86%, averaging 34%. This disease becomes increasingly severe eastward; in Leavenworth and Miami Counties the infection was

54% and 85%, respectively. West of Manhattan the disease is progressively less; in the 11 northcentral counties it was found in 13 out of 22 fields, ranging from 1 to 34%, averaging 6%. The northeastern counties with their higher rainfall appear to be more favorable for the development of the disease.

Charcoal rot (Sclerotium bataticola), on the other hand, is not abundant in the northeastern counties but is severe in the northcentral counties. East of Manhattan it is present in only 7 out of 13 counties in 12 out of 28 fields, ranging from 1 to 82%, averaging 6%. West of Manhattan it was found in 20 out of 22 fields, in every county, ranging from 6 to 70%, averaging 40%. There is a definite increase in the amount of infection from the eastern border westward. In the eastern counties the disease is in the early stages with sclerotia in the decayed roots and a few deep in the crown. In the western counties sclerotia are abundant in the crown and often extend up into the stalk 8 to 10 inches. In the distribution of this disease drouth and burning are apparently predisposing factors.

In the late-planted fields, especially in the bottom lands, the stalk rots are late in developing and thus appear to be less than in upland fields. In a few very late fields no stalk rots were found although there were indications of early stages. In the northcentral counties where charcoal is abundant the amount in upland fields (49%) is much higher than in bottom lands (38%). In the northeastern counties where Diplodia stalk rot is abundant the reverse is true with the percentage in bottom land (34%) being higher than in upland fields (29%).

The amount of lodging is very variable, not only from field to field, but also within individual fields. In general there is less lodging in the northeastern counties where Diplodia stalk rot is abundant than in the northcentral counties where charcoal rot is abundant. In the former, lodging ranged from 0 to 48%, averaging 9%, while in the latter, lodging varied from 0 to 82%, with an average of 27%.

Ears were examined for symptoms of ear rots in 61 fields and corn cribs in 24 counties. In general ear rots are not serious this year. Nigrospora oryzae was the commonest ear rot, being found in most localities, ranging in amount from 1 to 8%, average 2%. Diplodia zeae averaged 2% and Fusarium moniliforme 0.5%. In every field Fusarium and other fungi were found following ear worm injury, the amount varying from 2 to 40%, averaging 10%. Germination tests would undoubtedly reveal a much higher percentage of ear rot infection.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

SURVEY FOR BACTERIAL WILT OF ALFALFA IN PENNSYLVANIA

Leon J. Tyler

During the period from November 2 to 15, a total of 84 alfalfa fields, in 8 counties in southeastern Pennsylvania, were visited (see Table). Since alfalfa is grown extensively as a cash crop (being dried and ground into meal) in Lehigh and Northampton Counties, a more intensive survey was made in these 2 counties.

The bacterial wilt disease (caused by Corynebacterium insidiosum) was

Table 1. Distribution, prevalence and severity of Alfalfa bacterial wilt in southeastern Pennsylvania, 1943.

Date, county and nearest town	No. of fields visited	Present percent full stand		Percent of plants in stand having Bacterial wilt		Age of stand. No. of fields *			
		Range	Ave.	Range	Ave.	1st yr.	2nd yr.	3rd yr.	Older
November 2									
Susquehanna									
Great Bend	1		50		5				
November 3-4									
Northampton									
Ackermanville	1		90		0.0				
Edelman	1		50		40				
"	3	85-95	90		0.0	1	1	1	
Nazareth	6	50-90	67	5-40	18			2	4
"	4	85-100	95		0.0	2			
Bath	5	50-90	76	1-20	8			2	3
"	1		70		0.0				1
Northampton	1		25		25				1
"	3		100		0.0	2	1		
Pennsville	2	60-90	75	10-50	30			1	
"	1		50		0.0				1
Cherryville	2	60-85	73	5-10	7.5			1	1
November 5-6									
Lehigh									
Coplay	1		100		0.0	1			
Neffs	3	75-90	83	10-50	26.5			1[a]	
"	2	95-100	97		0.0	1			
Schnecksville	1		60		15				1
"	1		100		0.0	1			
Jordan	1		25		25				1
"	1		100		0.0	1			
Allentown-	2[a]	50-85	67	20-30	25				1
R. #309	2		100		0.0	2			
Siegersville	1		95		1.0		1		
Between Allentown	5	60-90	81	3-10	6.6			3	1
and Chapmans	1[b]	---	--		31			1	
on R. #22	1[c]	----	--		8				1
Chapmans	1		90		5				
November 7									
Bucks									
Dublin	1		50		2				
Danboro	1		50		0.0				1
Buckingham	1		40		15				1
"	1		75		0.0				1
Doylestown	1		95		50		1[a]		

Table 1. (continued)

Date, county and nearest town	No. of fields visited	Present percent of full stand. Range	Present percent of full stand. Ave.	Percent of plants in stand having Bacterial wilt. Range	Percent of plants in stand having Bacterial wilt. Ave.	Age of stand. No. of fields * 1st yr.	2nd yr.	3rd yr.	Older
November 8									
Montgomery									
Center Square	2	25-90	57	5-30	18			1[a]	1
"	2		100		0.0	2			
November 8-9									
Chester									
N.E. of Paoli	1		90		15		1		
Lionville	1		90		5				
Elverson	1		50		10				1
Brandywine Manor	1		60		20				
Downington	1		100		0.0	1			
on R.#22, N.W.	1		80		15				
Downington	2	50-70	60	10-40	25			2[a]	
"	1		100		0.0	1			
West Chester - So.									
on R. #322	1		90		10				
Hamorton	1[a]		90		20				
November 10									
Lancaster									
Mechanics Grove	1		100		0.0	1			
Wakefield	1		20		5				1
Mechanics Grove	1		20		25				1
Lancaster - N.E.									
R. #222	1		90		10		1		
November 11									
York									
Winterstown	1		90		5				
York	1		90		trace		1		
Manchester	1		60		15				

* In some cases the sum of fields indicated in the 4 right-hand columns does not check with that in the left-hand column; the reason is that the writer was uncertain of the age and did not have time to look up the owner.

a Many plants dying at the present time.

b Three hundred roots in a plowed field were examined of which 94 exhibited definite symptoms of wilt.

c One hundred roots in a plowed field were examined and 8 exhibited wilt symptoms.

found in each of the 8 counties, in 54 of the 84 fields inspected. In fields where it occurred the percentage of diseased plants ranged from a trace to 50, the average being approximately 17%.

Many of the alfalfa fields in which the wilt disease was not found were first-year stands. A few of the fields in which the disease was not found were old stands; failure to find it in such stands may have been due to its low prevalence. When the disease was not readily found, additional time was not spent in searching for it, because it seemed more important to visit as many fields as possible in the limited time available.

The highest percentage (50%) of diseased plants was noted in a second-year stand near Doylestown in Bucks County. The owner of this field revealed that for several years he had experienced great difficulty in maintaining a fair stand of alfalfa for even 3 years.

From the observations recorded here together with those summarized earlier it would appear that at least 15 to 20% of the alfalfa crop in Pennsylvania is destroyed each year by the bacterial wilt disease.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

OTHER REPORTS ON DISEASES OF CEREAL AND FORAGE CROPS

DISEASES OF SMALL GRAINS IN NEBRASKA AND KANSAS: Leaf rust (Puccinia rubigo-vera tritici) was very abundant in a field of volunteer wheat in Nemaha County, Nebraska. Speckled leaf blotch (Septoria tritici) was also found. (Week ending November 6).

Crown rust (Puccinia coronata) was found on fall-sown oats in Jefferson County, Kansas, in the Kaw Valley 7 miles northwest of Lawrence. (November 16-24). -- Stuart M. Pady, Emergency Plant Disease Prevention Project.

LEAF BLIGHT OF SUDAN GRASS: E. A. Walker reported a 4-acre field of mature plants near Hardingville, Gloucester County, New Jersey, with 100% of the leaves affected by Helminthosporium turcicum (Oct. 20-23). G. M. Watkins observed a large field near Crystal City in Zavala County, Texas, that was severely damaged by the disease (November 25-26).

ALFALFA DISEASES IN TEXAS: Rust (Uromyces striatus) was prevalent in a field near Progreso (Hidalgo County), where it was causing slight defoliation. The rust pustules reduced the photosynthetic area at least 20%.

Leaf spot (presumably Pyrenopeziza medicaginis) was observed in 2 plantings; however, the amount of loss it was causing was considerably less than that caused by rust in the same fields.

Girdling, reported by various investigators as due to insects was apparent in the planting near Progreso, the loss amounting to nearly 5% of the plants. Some of the injured plants exhibited symptoms suggesting that the trouble may be due to the activity of a fungus. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20 - December 1.

COWPEA DISEASES IN TEXAS: Rust (Uromyces phaseoli var. vignae) was present in a 2-acre planting north of Santa Rosa (Cameron County). Rust pustules occurred on most of the plants, reducing the photosynthetic area

at least 10%.

Ashy stem blight (Macrophomina phaseoli) was well distributed in the Santa Rosa field, causing a loss estimated at 2%.

Stem rot (Rhizoctonia solani) occurred in 2 fields, one near Laredo (Webb County), the other near Weslaco (Hidalgo County); in each case the loss was less than 1%. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. November 20 - December 1.

Several cowpea fields were examined just north of Edinburg (Hidalgo County). Rust was severe in all fields, having involved almost all leaflets on all plants. Bacterial crown canker (cause undetermined) was observed in all fields, but was not as severe as in other parts of the State. -- G. M. Watkins, Emergency Plant Disease Prevention Project. November 25-26.

REPORTS ON PEANUT LEAF SPOT: Arthur S. Rhoads observed 2 plantings in Marion County, Florida, that had not been dug despite the lateness of the season, one a 3-acre field near Ocala, the other of 17 acres at Reddick, both of which were showing fully 50% defoliation due to leaf spot (November 12). Howard W. Larsh reported severe defoliation in 2 plantings in the Okmulgee area of Oklahoma (November 1-6). The disease was causing serious loss of foliage in 3 large fields near Dilley, Frio County, Texas, according to G. M. Watkins (November 15-20). Only a few of the youngest leaves remained alive on most plants.

In all cases the organism reported was Mycosphaerella berkeleyii (Cercospora personata).

SOYBEAN DISEASES IN NEBRASKA: Charcoal rot (Sclerotium bataticola) was found in a field of soybeans in Burt County and charcoal rot and anthracnose (Glomerella glycines) were present on dead stalks in a field in Nemaha County. -- Stuart M. Pady, Emergency Plant Disease Prevention Project. Week ending November 6.

A CORRECTION: - SOYBEAN DISEASES IN KANSAS: Dr. L. M. Melchers writes that the date October 15 should be added to the report of E. D. Hansing quoted by Stuart M. Pady on page 606 of the November 1 issue (number 22). This corrects the apparent discrepancy between the statement that it represented the first report of anthracnose on soybean in Kansas, and the report on page 591 of the October 22 issue (number 21).

DISEASES AND INJURIES ON CITRUS TREES IN CENTRAL FLORIDA

Arthur S. Rhoads

Citrus groves visited in the ridge section of central peninsular Florida were in excellent condition generally. Melanose (Diaporthe) was considered to be worse than usual owing to a wet spring. No complaint was heard about scab (Elsinoë). In Pinellas County melanose also was reported to be worse than usual this year as a result of a late bloom followed by rain. Scab is not a problem in this county.

Foot rot: Foot rot (Phytophthora parasitica) was prevalent in old sweet seedling orange trees and in old grapefruit trees on grapefruit stock in one grove visited near Waverly (Polk County). This disease evidently was of several years' standing and had resulted in extensive decay at the bases of the trees.

Tree Decline. The most alarming trouble to growers was the decline of citrus trees prevalent on rough lemon stock throughout the ridge section of the State from Lake Alfred south to Lake Placid and also in Pinellas County on the West Coast. This trouble has been of fairly common occurrence in these sections of the State for a good many years. A brief amount of its occurrence and symptoms was published by the writer several years ago (Plant Dis. Reptr. 14: 169-170. 1930). This disease has taken a considerable toll of bearing trees in numerous groves over a wide area for many years, but no concerted effort has been made to do more than make observations from time to time. It has been considered by some of late years to be a nutritional trouble, possibly due to some deficiency. One of the field men of a large growers' cooperative association was inclined to consider nematodes responsible. On the other hand, the decline may well follow the loss of the fibrous feeding roots from drought.

As a rule this trouble occurs sporadically throughout citrus groves but trees sometimes decline in groups in local areas. However, in one grove visited near Waverly this decline affected practically all the trees in a rather sharply defined area of about 1/2 acre in which the transition to trees not exhibiting it was abrupt. The foliage on the affected trees was characteristically small and hard-looking and exhibited a pronounced bronzing. The trees have failed to respond to applications of dolomitic limestone and were reported to be deficient in fibrous feeding roots.

Tree Injury from Saline Irrigation Water. During the past year citrus groves of Pinellas County suffered severely from a prolonged drought of several months duration. There was so little rainfall over this period that growers who had irrigation facilities were forced to make frequent use of them during a period of 9 out of 11 months. After irrigation had continued for some time it was found that the water pumped from the artesian wells had become quite saline and had caused extensive damage to large numbers of trees in several groves in the Indian Rocks, Seminole, and Annona sections. The extent of tree injury varied greatly in different groves and in a few groves considerable areas of large bearing trees have died back extensively. The injury began by defoliation and dying of the twigs and branches, the upper portions of the crowns being most severely affected in general. The foliage of affected trees became decidedly small and dull and hard looking. Little or no flush of growth developed during the summer and the fall flush was scanty and subject to severe melanose attack. At the time of the writer's visit trees in some of the less severely injured groves were said to have improved somewhat but in others more severely injured large trees were half dead and the ultimate recovery of many appears doubtful.

Analyses of the water pumped from the wells showed a wide variation in salt content but in one or two instances the tests showed as high as 4800 p.p.m. of NaCl. Samples taken from various wells showed that the salt content often increased rapidly after but from 2 to 3 hours of pumping. The water table of the soil was very low as a result of prolonged drought and it appeared that when pumping began the underground water supply was being renewed from the Gulf of Mexico. The frequent occurrence of drought

in this section during the past few years has caused growers to take stock of the situation. It is generally felt that the lowered lake levels and the receding water table that have prevailed during the past few years is due in a large measure to excessive drainage of land incidental to reclamation for agricultural and other developmental purposes during former years, especially during the "boom" period when so much reclamation was done with no thought whatever to water conservation. Many of these projects resulted in overdrainage of the land. Moreover, as growers now realize, the groves, with greatly increased acreage and age, now are making a far greater demand upon the water supply than ever before. The citrus growers of this section are now convinced that they face a serious situation due to the lack of adequate soil moisture reserves and a special effort is being made to arouse public interest in water control and conservation.

Mushroom Root Rot. In a citrus grove at Waverly (Polk County), where losses of trees from Clitocybe root rot (Clitocybe tabescens (Scop. ex Fr.) Bres.) have been observed to occur over a period of several years, a brief inspection showed that 3 additional grapefruit trees on rough lemon stock were attacked. Ustulina vulgaris Tul. was fruiting on the bases of 2 of these trees and Ganoderma applanatum (Pers.) Pat. var. tornatum Pers. on the other. These 2 fungi have been observed by the writer in former years in this particular grove, occurring as secondary fungi on trees attacked by Clitocybe root rot.

Dodder. In one citrus grove in the Eloise section near Winter Haven dodder (Cuscuta americana L.) was found to have matted itself over nearly all the tops of 2 good-sized bearing orange trees. It was also growing on a number of weeds under these trees, and apparently spread from these to the low-hanging branches of the trees.

Vines Injurious to Citrus and Other Trees. In traveling south down the ridge section of peninsular Florida from Winter Haven to Lake Placid it was noted that the rosemary-pea or crab-eye vine (Abrus precatorium L.), which has been prevalent in old neglected citrus grove properties at Winter Haven for a number of years, has become very much of a pest in citrus groves and town plantings. This vine was found to be of frequent occurrence in a number of citrus groves extending south to Lake Placid, commonly forming dense mats over the tops of trees. In addition to citrus trees the vine was of frequent occurrence about towns, growing in great profusion over various trees and ornamental plantings in neglected properties. It was especially prevalent at Sebring. One large owner of citrus groves at Lake Placid stated that he had 8 men doing nothing for the time being but cutting these vines and that this was the third time they had been cut during the year. He found that the tops of citrus trees soon died back seriously after the vines were allowed to develop mats over the tops. Comments on the pestiferous nature of this vine in citrus groves were also made at Waverly. The vine was later observed to be troublesome in citrus groves south of Clearwater on the Pinellas Peninsula, and on ornamental plants in woods at Chinsegut Hill Sanctuary at Brooksville.

Cypress-vine (Quamoclit pennata (Desr.) Voigt.) was found growing rampantly over numerous grapefruit trees in one citrus grove south of Clearwater and occurred to a lesser extent in a number of others in this section.

Madeira vine (Boussingaultia leptostachya Moq.) was found to have formed a dense mat over a Marsh grapefruit tree in another grove near Indian Rocks (Pinellas County).

Cassytha vine (Cassytha filiformis L.) was found forming dense mats over the tops of oak and other trees in one locality at Sebring (Highlands County). This vine was previously reported to be widespread and rampant on the southern end of Merritt Island, where it occasionally grows over citrus trees.

In both the latter locality and south of Clearwater wild muscadine grapevines (Vitis munsoniana Simpson) occasionally prove injurious to citrus and other trees, especially in citrus groves adjoining woods and roadside thickets. On the southern end of Merritt Island the moonvine (Calonyction) and jackbean (Canavalia) also occasionally form dense mats over citrus and other trees, with detrimental results. The ubiquitous Spanish moss (Dendropogon usneoides (L.) Raf.) rarely causes much damage to well-cared for citrus trees except when adjacent to large oak trees or woods. It thrives in abandoned citrus trees in the more humid sections. It commonly attains sufficient volume and density on oak and other broadleaf trees in the more humid situations, however, to exert a pronounced shading effect. It also develops extensively on longleaf pine trees around lakes in central peninsular Florida.

EMERGENCY PLANT DISEASE PREVENTION PROJECT. October 24 - November 7.

OTHER REPORTS ON DISEASES OF FRUIT AND NUT CROPS

APPLE DISEASES IN OKLAHOMA: During the period from October 18 to 23, orchards totalling 350 acres were surveyed in the vicinity of Westville and northwest to Adair and Vinita. The most important disease observed was black rot [Physalospora obtusa]. Leaves revealed typical frogeye lesions, fruit infections were observed in all orchards surveyed, and twig infections were noticeable in most instances. Loss varied from 1% in well sprayed orchards to at least 10%, or more, in neglected orchards. Blotch (Phyllosticta solitaria) and scab [Venturia inaequalis] infections were apparent on a few trees; however, the loss due to these diseases was less than 3% in most orchards. The loss from scab was more than 5% in an orchard near Westville.

In a 4-acre orchard southwest of Yale, visited during the first week in November, blister canker (Nummularia discreta) and blotch were causing severe damage to Yellow Transparent. Characteristic symptoms of late stages of blister canker, including nailhead-like stromata and shedding and blistered appearance of the bark, were apparent on 4 trees, and several others revealed earlier symptoms. Blotch infection in this orchard was almost 100%. Blotch cankers were seen on all twigs except those of the current year's growth and older cankers were still apparent, large cankers being observed on branches 10 years old or older. Leaf infection was observed on all of the leaves still on the trees. Blotch had caused severe defoliation, and leaves on the ground revealed blade and petiole infections. -- Howard W. Larsh, Emergency Plant Disease Prevention Project.

GRAPE DISEASES IN CALIFORNIA: In Tulare County 2 days were spent with the California Experiment Station men who were carrying on roguing work on Pierce's disease (virus). One hundred and sixty acres serving as a check plot were being rogued. This afforded an opportunity to observe an

area in which Pierce's disease has been severe and no means of control had been attempted until recently. The disease was more prevalent in some parts of the plot than in others. From actual counts of diseased vines that had been removed earlier in the season, it was estimated roughly that on the average approximately 6 to 8% of the vines had been taken out this year because of Pierce's disease.

At this time the harvesting of the grape crop was nearing its close. A number of rotted fruits were collected and examined later. The fungi associated with these rots were identified as species of Aspergillus, Penicillium, Alternaria, Cladosporium, Botrytis, and Macrophoma. -- Horace L. Barnett, Emergency Plant Disease Prevention Project. Week ending October 23.

STRAWBERRY RED STELE IN INDIANA: During the first part of the week ending November 27 strawberry plantings near Terre Haute, Warsaw, Goshen, and Lafayette that were being grown for plants were examined for red stele (Phytophthora fragariae). No symptoms of the disease were found. At Lafayette an experimental planting, planted with red-stele-affected Catskill plants in April, was sampled. During May and June approximately 20% of the plants died, apparently from red stele. However, no symptoms characteristic of recent red stele infection were found on 34 mother plants and 80 runner plants examined. The apparent lack of symptoms is of interest with regard to both the seasonal development of the disease and the time that field inspection should be made for certification by state inspectors. -- R. C. Baines, Emergency Plant Disease Prevention Project.

PECAN DISEASES IN OKLAHOMA: During the first week of November an extensive and concentrated survey was made in the pecan-growing region of the State, the total acreage observed amounting to six or seven thousand acres. Brown leaf spot (Cercospora fusca) was found causing slight damage to the varieties Moneymaker and Stuart in one planting near Muskogee; infection was slight, however, and very little, if any defoliation resulted.

Pecan scab (Cladosporium effusum) was found to be the most widespread and most prevalent disease of pecan in Oklahoma during 1943, epsecially in unsprayed orchards. Severe defoliation was apparent on the varieties Burkett and Squirrel's Delight in 2 orchards. Scab was observed on the following varieties: Burkett, Squirrel's Delight, Western Schley, Eastern Schley, Williamson, and Success, as well as on several native pecan trees.

Characteristic lesions of the vein spot disease (Gnomonia nerviseda) were evident on the varieties Burkett and Stuart, but infection was light and no defoliation could be attributed to this fungus.

Downy spot (Mycosphaerella caryigena) is becoming more apparent in Oklahoma. Many varieties were affected. Severe defoliation was observed in one planting where the varieties Burkett, Moneymaker, Success, and Stuart were susceptible. -- Howard W. Larsh, Emergency Plant Disease Prevention Project.

FURTHER NOTES ON CLITOCYBE ROOT ROT OF WOODY PLANTS IN FLORIDA

Arthur S. Rhoads

The loss of a considerable number of Cunningham beefwood trees (Casuarina cunninghamiana Miq.) due to the mushroom root rot (Clitocybe tabescens

(Scop. ex Fr.) Bres.) was observed in plantings in or about citrus groves at Island Grove (Alachua County) and at Citra (Marion County), that were made in an effort to secure cold protection. In the citrus grove at Island Grove 12 of the beefwood trees planted along both sides of the highway through the grove were dead or dying and in the grove at Citra 30 of the beefwood trees interplanted with citrus trees on the lower side of the grove were dead or dying. In a few instances clusters of the mushrooms of the fungus had developed at the bases of the attacked trees despite the dryness of the season. Observations by the writer over a long period of years indicate that this particular species of Casuarina is less susceptible to mushroom root rot than the other 4 species commonly planted about the State.

In a residential property at Lake Alfred (Polk County) where losses of exotic plants from Clitocybe root rot have been especially severe over a period of many years, 2 young specimens of Surinam calliandra (Calliandra surinamensis Benth.), one of the USDA introductions, were found attacked. One, on which the fungus had fruited recently, was dead; the other was showing wilting and dying of some of the stems. Clitocybe tabescens had also fruited a few days previous to the visit, at the base of a still living shrubbery yew podocarpus (Podocarpus macrophylla var. maki Endl.), which was observed to be attacked by root rot several months ago.

In a property at Babson Park, where losses of exotic plants from Clitocybe root rot also have been frequent over a period of several years, the owner reported the recent loss of a cainito starapple (Chrysophyllum cainito L.) and another loquat (Eriobotrya japonica (Thunb.) Lindl.). He stated that he loses Chinese hibiscus bushes (Hibiscus rosa-sinensis L.) at an average rate of one a month and that he had given up trying to grow guavas and loquats as they had proved too susceptible to the disease.

At Ocala (Marion County) 3 young clusters of embryonic sporophores of Clitocybe tabescens were found developing at the base of a large laurel oak (Quercus laurifolia Michx.) tree in the yard of a residential property.

At Sebring (Highlands County) 2 jacaranda trees (Jacaranda ovalifolia R. Br.) on the grounds of a hotel were found attacked by Clitocybe root rot, the dead one having remnants of old clusters of the fungus at the base. In a short row of beefwood trees (Casuarina stricta Ait.) planted along side of a residence at another location in Sebring one tree was found to have died recently from root rot.

At De Soto City (Highlands County) one of a group of Brazilian pepper bushes (Schinus terebinthifolius Raddi) in a roadside ornamental planting was found to have died from root rot.

In a residential property on the beach north of Indian Rocks (Pinellas County) one of a few young horsetail beefwood trees (Casuarina equisetifolia L.) had died recently from Clitocybe root rot.

At Dunedin (Pinellas County) 5 additional trees were found to have died from root rot in a screen planting of Cunningham beefwood (Casuarina cunninghamiana Miq.) where a few were noted to be dead or dying about 2 years ago.

At Chinsegut Hill Sanctuary at Brooksville (Hernando County), where a large number of exotic trees planted in the woods have died from root rot over a period of several years, a brief examination showed the loss of 5 additional trees of beakpod eucalyptus (Eucalyptus multiflora Poir.), 2 of Moitch eucalyptus (Eucalyptus rudis Endl.), 2 of sturdy cypress pine

(Callitris robusta R. Br.), and 1 of the native turkey oaks (Quercus laevis Walt.).

On the Experiment Station grounds at Gainesville one of several Brazilian Butia palms (Butia capitata (Mart.) Bacc.) planted near a tract of woods was observed to have died from root rot. Numerous sporophores of Clitocybe tabescens had developed at the base.

EMERGENCY PLANT DISEASE PREVENTION PROJECT. October 24 - November 7.

BRIEF NOTES ON PLANT DISEASES

MACROPHOMINA PHASEOLI-SCLEROTIUM BATATICOLA: There is some evidence indicating that possibly not all of what is known as Sclerotium (Rhizoc - tonia) bataticola is connected with the pycnidial fungus Macrophomina phaseoli. Until their relationships are more definitely known, it is desirable to restrict the use of the latter name, and of the common name "ashy stem blight" to instances where the pycnidia are observed in nature or produced in culture, and to use Sclerotium bataticola and the common name "charcoal rot" whenever only the sclerotial fungus is found and a definite connection with Macrophomina has not been proved; or at least, if Macrophomina is used, to state definitely whether or not pycnidia were seen.

VIRUS DISEASES AND RED ROT OF SUGARCANE IN LOUISIANA: A trip was made through the sugarcane area of Louisiana with Dr. I. L. Forbes and Mr. P. H. Dunckelman. Sugarcane areas were visited in West Baton Rouge, Lafayette, Iberia, St. Mary, Lafourche, Iberville, St. Martin, St. Landry, Avoyelles, Rapides and Ascension Parishes. As a whole the condition of the fields and the crop yields were very good. In Rapides Parish one property had an estimated 5% chlorotic streak in a 12-acre field first-year stubble of C.P. 29-320 variety. Mr. Dunckelman had observed this field in 1942 and estimated 1 to 2% chlorotic streak. The owner was plowing up this particular field of stubble to prevent further spread of the disease. Another grower who had obtained seed of C.P. 29-320 from a sugar mill had an estimated 2% of chlorotic streak in an 8-acre field. One other field observed showed 1% chlorotic streak in 2-1/2 acres. This disease is not widespread at the present time. Mosaic was found throughout the area visited in varieties Co. 290 and Co. 281 with the exception of St. Mary Parish where an extensive rogueing program of cane for seed purposes has been carried out for the past several years. In most fields of these varieties no mosaic or only a trace of mosaic could be found.

Red rot, Colletotrichum falcatum, was general on midribs of most varieties. Several fields of Co. 290 and C.P. 29-103 that had been heavily infested by the sugarcane borer were examined for red rot entering the cane through borer injuries. The standing canes were split open and examinations made for red rot lesions. In Co. 290 approximately 1/2 of the canes examined showed red rot infection following borer injury. In C.P. 29-103, which is more resistant to red rot, only a trace was observed. -- L. H. Person, Emergency Plant Disease Prevention Project. November 8-12.

DODDER ON WOODY PLANTS IN FLORIDA: At Newnan's Lake, near Gainesville

(Alachua County) Cuscuta compacta Juss. was found attacking a number of woody plants at the edge of an area of swamp forest, including southern waxmyrtle (Myrica cerifera L.), Florida elder (Sambucus simpsonii Rehd.), swamp blackgum tupelo (Nyssa sylvatica var. biflora (Walt.) Sarg.), buttonbush (Cephalanthus occidentalis L.), Virginia sweetspire (Itea virginica L.), and blackberry (Rubus sp.). -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project. October 24 - November 7.

OCCURRENCE OF DODDER IN WEST VIRGINIA: At least 2 collections of dodder on weeds were made in West Virginia, in Hardy County in July. No cases of dodder on cultivated crops were reported. -- Carlton F. Taylor, Emergency Plant Disease Prevention Project. November 27.

DODDER ON PEPPER IN TEXAS: In July, P. A. Young of the Texas Agricultural Experiment Station sent specimens of Bell pepper parasitized by a Cuscuta determined by S. F. Blake, of the Division of Plant Exploration and Introduction, as C. pentagona Engelm. According to Dr. Young, the parasite had ruined 116 pepper plants in a commercial field in Cherokee County.

LIGHTNING INJURY TO TOMATOES IN WEST VIRGINIA: One well-authenticated case of lightning injury occurred in a tomato field in Morgan County during late June. This was investigated by Mr. E. C. Sherwood, Extension Plant Pathologist, who found that the plants in a circular area had been killed. At the time that I saw the field, this area had been replanted and the replants were in a vigorous condition. -- Carlton F. Taylor, Emergency Plant Disease Prevention Project. November 27.

LIGHTNING INJURY TO TREES IN FLORIDA: A single longleaf pine (Pinus palustris Mill.) in the woods between Floral City and Inverness (Citrus County), to which attention was directed by the recent browning and dying of the foliage, was found to have been struck by lightning and exhibited the characteristic spiral furrow on the trunk.

A tall Mexican Washingtonia Palm (Washingtonia robusta Parish) in a parkway planting at Lake Placid, which had died recently, also proved to have been struck by lightning. Residents at nearby filling stations stated that it began to die within 3 days following a lightning stroke that occurred one Saturday evening. While no furrow was torn down the trunk, as commonly occurs with other trees, the boots on the lower portion of the trunk were torn off with great thoroughness. The writer's observations on lightning struck cabbage palmettoes over a long period of years indicate that the discharge invariably kills the bud but passes down the tough, fibrous trunks with little or no tendency to tear furrows. -- Arthur S. Rhoads, Emergency Plant Disease Prevention Project.

A CORRECTION -- CERCOSPORA ZEAE-MAYDIS ON CORN: R. A. Hyre calls attention to an important omission in the quotation from Dr. Chupp's letter in the report on page 553 of the October 15 issue (number 20). The omitted line contained the name of the organism and a citation to the original description. The third paragraph on page 553 should read as follows:

"The most common Cercospora on the corn leaves you sent me, September

11, was C. zeae-maydis Tehon & Daniels, Mycologia 17: 248. 1925. The spores are hyaline, wide, 5-9 x 30-80 microns, with a long obconically truncate base and blunt tip, plainly multiseptate. There was also a slight amount of C. sorghi E. & E., Jour. Mycology 3: 15. 1887. This has much more narrow conidia, acicular, truncate base, subacute tip, 2-5 x 30-300 microns."